Label

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For other uses, see Label (disambiguation).

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Shirt with labels

A label with faux embossing

Bumper stickers on a car.

Bottles of wine with labels

A **label** is a piece of paper, polymer(pvc, silicone rubber) cloth, metal, or other material affixed to a container or article, on which is printed a legend, information concerning the product, addresses, etc. A label may also be printed directly on the container or article.

Labels have many uses: product identification, name tags, advertising, warnings, and other communication. Special types of labels called digital labels (printed through a digital printing) can also have special applications such as RFID tags, security printing, and sandwich process labels.

Contents

Attachment

Labels can be attached by:

- Pressure sensitive adhesives (also called PSA or self-stick) are applied with light pressure without activation or heat. PSA labels often have release liners which protect the adhesive and assist label handling.
- Heat activated adhesives: for example, "in-mold labeling" can be part of blow molding containers and employs heat activated adhesives. Hot melt adhesives are also used.
- Wet glue (starch, dextrin, PVA, etc) or water moistenable gummed adhesive
- Yarn or twine for tying on a label
- Rivets used to attach information plates to industrial equipment
- Shrink wrap for printed shrinkable labels placed over packages and then heated to shrink them
- Sewing for clothing, tents, mattresses, industrial sacks, etc

Adhesive types

Pressure sensitive label adhesives are commonly made from water based acrylic adhesives, with a smaller volume made using solvent based adhesives and hotmelt adhesives. The most common adhesive types are:

- **Permanent** - Typically not designed to be removed without tearing the stock, damaging the surface, or using solvents. The adhesion strength and speed can also be varied. For example, full adhesion can be nearly instant, or the label can be almost removable for a short period with full adhesion developing in minutes or hours (known as respositionable adhesives).

- **Peelable** - Adhesion is fairly strong and will not fall off in normal circumstances, but the label can be removed relatively easily without tearing the base stock or leaving adhesive behind on the old surface. The adhesive is usually strong enough to be applied again elsewhere. This type is frequently known as 'removable'. There are many different types of removable adhesives, some are almost permanent, some are almost 'ultra peelable'.

- **Ultra-peelable** - Designed principally for use on book covers and glass, when removed these adhesives labels do not leave any residue whatsoever. Adhesion is weak and only suitable for light duty applications. Normally these labels have very little adhesion to anything once they've been removed.

- **Freezer or Frost fix** - Most permanent and peelable adhesives have a service temperature limit of -10 degrees Celsius, whereas freezer (otherwise known as frost fix) adhesives have a service temperature -40 degrees Celsius and are suitable for deep freeze use

- **High Tack** - A type of permanent adhesive that exhibits a high initial grab to the application surfaces, and is commonly used at higher coat weights to enable labels to adhere strongly to difficult, rough or dirty surfaces.

- **Static Cling** - This is not actually an adhesive at all. The material (usually PVA) has a static charge to enable its adhesion to flat, smooth surfaces such as glass. It is not sticky as such and is commonly used for window advertising, window decorations, oil change labels, etc.

Stock types

The "label stock" is the carrier which is commonly coated on one side with adhesive and usually printed on the other side. Label stocks can be a wide variety of papers, films, fabric, foils, etc.

- **Puffy** - either water, gel, foam, or air-filled create a soft, raised sticker.
- **Litho** - one of the most common base stocks
- **Latex** - a litho stock with some added latex allows the label to be much more flexible and form around certain curved objects more easily than standard litho.
- Various plastics such as acetate, vinyl, and PET film allow a variety of features, such as greater strength, flexibility, transparency, resistance to tearing, etc. They typically require special equipment and printing methods (ultra-violet curing is common) as they do not normally print well with conventional ink. A bumper sticker is usually a vinyl label with a very strong, durable adhesive and lightfast inks. A type known as 'Destructible Vinyl' is commonly used for asset labels. It combines a very thin frangible face stock with a very strong high tack adhesive, thus making the label impossible to remove without damage.
- **Foil** - has the shiny properties of a metal foil.
- **Thermal** - direct thermal label stock will change color (usually black) when heated. A heating element in the shape of letters or images can be used to create an image on the label. Custom

labels can be easily be made on location in this way. A disadvantage is durability, because another heat source can ruin or obscure the image, or it may fade completely over time.

- **Thermal Transfer** for applications that cannot use Thermal (Thermal Direct) label material because of heat source proximity or short label life, a more widely used material is Thermal Transfer Label printer. This material has the advantage of a much longer readable life and does not fade with time or heat. Most major manufacturers of Thermal Printers can be used for either Thermal Transfer (TT) or Thermal (DT) labels. A thermal transfer ribbon will be required to print the labels. The cost of the ribbons + TT labels is similar to that of the DT labels on their own.
- **None** - labels can be printed directly on adhesive without using a substrate. Labels made in this manner are extremely fragile, however, and have been rendered virtually obsolete by other printing methods such as silk screen.
- **Thermal Transfer Ribbon Types**
  - Wax is the most popular with some smudge resistance, and is suitable for matte and semi-gloss paper labels.
  - Wax / Resin is smudge resistant, suitable for semi-gloss paper and some synthetic labels.
  - Resin is scratch and chemical resistant, suitable for coated synthetic labels.

The stock type will affect the types of ink that will print well on them.

Corona treating or flame treating some plastics makes them more receptive to inks and adhesives by reducing surface tension.

Application and use

A typical off-line label printer

Labels can be supplied:

- separately
- on a roll
- on a sheet

Many labels are pre-printed by the manufacturer. Other have printing applied manually or automatically at the time of application.

Some labels have protective overcoats, laminates, or tape to cover them after the final print is applied. This is sometimes before application and sometimes after.

Specialized high speed application equipment is available for certain uses.

Color

Ink and base stock color choices commonly conform to the Pantone Matching System (PMS) colors. The Pantone system is very dominant in the label printing industry. Additionally specialty inks such as metallic, UV ink, magnetic ink, and more are available. Ink is usually transparent however it can be made opaque. It has been known for certain companies to patent "their own" color. [1]. Digital labels use process colors to replicate Pantone solid colors.

Specialized labels

- **Piggyback labels** are made from combining two layers of adhesive substrate [2]. The bottom layer forms the backing for the top. The label can be applied to any object as normal, the top layer can be a removable label that can be applied elsewhere, which may change the message or marking on the remaining label underneath. Often used on Express mail envelopes.
- **Asset Labels / Tags** are used for marking fixed and non-fixed assets. They are usually tamper-evident, permanent or frangible and usually contain a barcode for electronic identification using readers.
- **Blockout labels** are not see-through at all, concealing what lies underneath with a strong gray adhesive.
- **Radioactive labels** The use of radioactive isotopes of chemical elements, such as carbon-14, to allow the in vivo tracking of chemical compounds.
- **Laser Labels** are generally die cut on 8.5" x 11" sheets, and come in many different shapes, sizes, and materials. Laser

label material is a nonporous stock made to withstand the intense heat of laser printers and copiers.

- **Inkjet Labels** are generally die cut on 8.5″ x 11″ sheets (US letter) and a4 size, and come in many different shapes, sizes, and materials. Inkjet label material is a porous stock made to accept ink and dye from your inkjet printer. One of the more modern inkjet label material stocks is waterproof printable inkjet material commonly used for soap or shower gel containers.
- **Security Labels** are used for Anti-counterfeiting, Brand protection, tamper-evident seals, etc. These combine a number of overt and covert features to make reproduction difficult. The use of security printing, Holography, Embossing, bar codes, RFID, custom printing, weak (or weakened) backings, etc. is common. They are used for authentication, theft reduction, and protection against counterfeit and are commonly used on ID cards, credit cards, packaging, and products from CDs to electronics to clothing.
- **AntiMicrobial Labels** With the growth in hospital acquired infections such as MRSA and E-Coli the use of Antimicrobial labels in infection sensitive areas of hospitals are helping in combating these types of microbes.

Uses

Stickers

Stickers are very widely used when an object requires identification with a word or idea. Brand stickers may be attached to products to identify those products as coming from a certain company. They may also be used to describe characteristics of the products that would not be obvious from simple examination. A Label dispenser is often used as a convenient way to separate the sticky label from its liner or backing tape.

They are frequently distributed as part of promotional, advertising, and political campaigns; for example, in many voting districts in the U.S., stickers indicating an individual has voted are given to each voter as they leave the polling place, largely as a reminder to others to vote. Other methods of underground forms of voting for your favorite graffiti artists' current productions are by an open form of appreciation such as clapping while passing such a sticker (a smile and a kind reminder to a fellow appreciator throughout the day is commonplace as well).

Stickers placed on automobile bumpers, called *bumper stickers*, are often used by individuals as a way of demonstrating support for political or ideological causes. Identification of vehicle registration and last service details are two examples of stickers on the inside of most car windscreens. The term "window sticker" is generally used for vinyl labels which are stuck to the inside of a vehicle's window, as opposed to water-resistant stickers that are stuck to the outside of a vehicle but can be affixed to anything.

Another common use for stickers is embellishing scrapbooking pages. With the advent of this very popular craft, every type of sticker imaginable can now be found: acrylic, 3D, cardstock, epoxy, fabric, flocked, sparkly, paper, puffy, vellum and so much more. While in the earlier days of scrapbooking stickers were sold mostly on 2"x6" sheets, now 6"x12" and even 12"x12" size sheets are very common.

Product label

Permanent product identification by a label is common. These labels need to be able to bond securely to the surface for its intended life and under in-use conditions. For example a label on an automobile engine needs to be resistant to the heat and oils encountered and to be secure for many years of use.

Removable product labels need to hold until they must be removed. For example, a label on a new refrigerator has installation and usage information: the label needs to be able to be removed cleanly and easily from the unit once installed.

An eco-label is used on consumer products (including foods) to identify products that may be less damaging to the environment and/or to humankind than other related products.

Textile labeling

In certain clothing articles, a label or other affixed instructions that report how a product should be refurbished. This type of label is required by the FTC, Federal Trade Commission, for certain clothing items in the United States of America[1].

A label including a tax identification number and material content list may also be required for certain textile items[2].

Package label

Packaging often has labels attached to (or integral with) the package. These communicate pricing, bar codes, UPC identification, usage guidance, addresses, advertising, etc. They also may be used to help resist or indicate tampering or pilferage. Often high speed label printer applicators are used to apply labels to packages.

Mailing label

Letters and packages need labels to identify the addressee and the sender. Many software packages such as word processor and contact manager programs produce standardized mailing labels from a data set that comply with postal standards. These labels may also include routing bar codes and special handling requirements to expedite delivery.

Environmental considerations

Labels can aid in recycling and reuse by communicating the material content of the item, instructions for disassembly, recycling directions, etc.

Based on the solid waste hierarchy, the quantity and size of labels should be minimized without reducing necessary functionality. Material content of a label should comply with applicable regulations. Life cycle assessments of the item being labeled and of the label itself are useful to identify and improve possible environmental effects. For example, reuse or recycling are sometimes aided by a label being removable from a surface. If a label remains on an item during recycling, a label should be chosen which does not hinder the recyclability of the item.

Notes

1. ^ Clothes Captioning: Complying with the Care Labeling Rule
2. ^ Threading Your Way Through the Labeling Requirements Under the Textile and Wool Acts

See also

- Packaging and labelling
- Nameplate
- Pressure sensitive tape

External links

- North American Security Products Association Industry group providing security standards for security label printing facilities.
- Tag and Label Manufacturers Institute [3]

- Special pages
- Printable version
- Permanent link
- Cite this page

Languages

- Deutsch
- Eesti
- Español
- Esperanto
- Français
- Bahasa Indonesia
- Italiano
- Lietuvių
- Nederlands
- 日本語
- Norsk (bokmål)
- Polski
- Русский
- Suomi
- Svenska
- Walon