

No liner – No waste

Linerless labels with TEGO® RC Silicones





Introduction

In 1985, our predecessor company Evonik pioneered Radiation Curing Silicones for use in release liners. Today, Evonik is a recognized market leader when it comes to Radiation Curing Silicones offering innovative and cost reducing process alternatives in the manufacture of release liners for a multitude of self-adhesive products.

Now we are ready for the next step in label technology – get rid of the release liner. No liner, no waste. While the basic concept has existed in the industry for a long time, innovations have developed to allow for a greater range of applications.

Linerless labels are changing the standard commodity label market. TEGO® RC Silicones' advanced curing technology allows film and paper labels to be siliconized on top of the print, whereas thermal and cationic methods can interfere with the substrate and printing. The reverse side of the label is coated with adhesive and the label is rolled up without a liner, just like a tape.

With Evonik's multiple global locations of pilot lines and laboratory testing facilities we are available to fine tune your developments and specific formulations. Face to face with close consultation we help you to enter the innovative world of linerless labels.

The concept

Linerless label technology is rapidly developing and growing fast in multiple label formats. Various concepts on the market offer solutions to different labeling requirements. The very robust curing mechanism of Evonik's free radical curing RC Silicones can be a key for linerless label applications on a wide variety of filmic or paper surfaces. Since the silicone curing is completed in fractions of a second, adhesive can be applied inline on one coating line.

Linerless thermal print labels

Linerless thermal labels are the most developed of the linerless labels currently on the market. The release coating is applied on top of the thermo sensitive facestock, adhesive is coated on the backside when the label is wound on itself like a tape. The thermal printing of the image appears underneath the translucent silicone coating. This system is used in scale systems, transportation, POS and business form applications because of the many advantages.

Characteristics and advantages

- Up to 40 % less material costs
- Variable label size
- More labels on a reel -> Savings in handling, transportation, and application

- Silicone coating protects against grease stains
- Premium surface feel and look
- Improved resistance against scratches and abrasion
- High accuracy scan read rates

Linerless wrap around labels for fresh food (poultry, meat, fish, deserts)

This is the self-adhesive version of a typical wrap-around label for containers and bottles. The concept uses pre-printed substrates with pattern/stripe coating of silicone and adhesive.

Characteristics and advantages

- Printed paper or film for the label face
- Various opportunities for decorative and informational printing

- Partial silicone and adhesive coating applied in-line
- Produced as a linerless roll label
- Label is cut on a special dispensing tool
- Variable information printing prior to dispensing possible

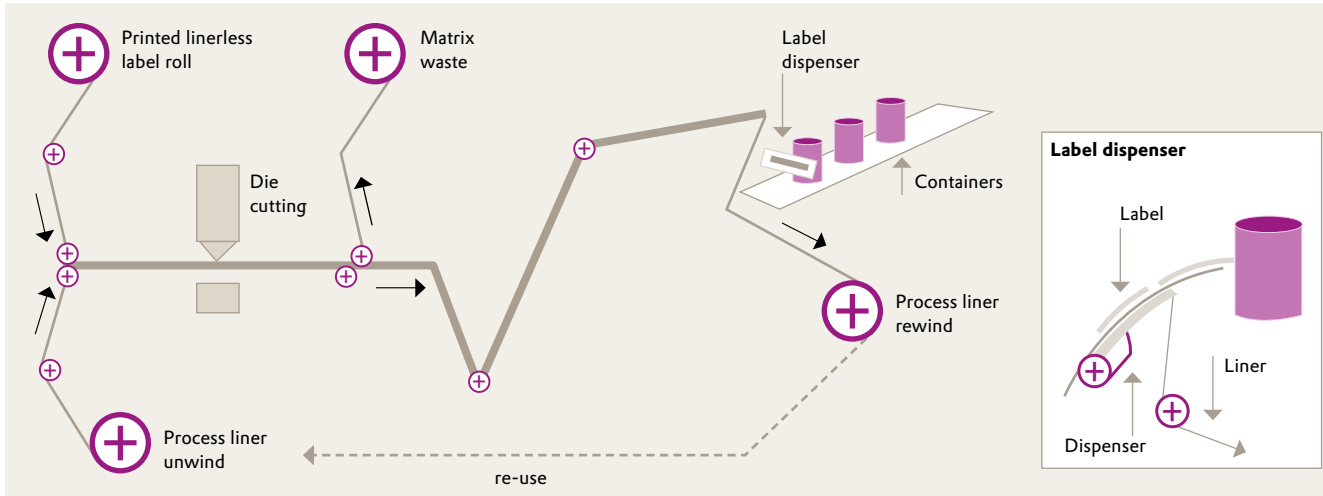


Linerless thermal print label



Linerless wrap-around labels

Linerless labels – dispensing with reusable process liner



Various technologies for primary labels

Primary labels are the real challenge for linerless labels. In these applications the release liner gives a high stability on press and in automatic label dispensing. For example, the labels can be die-cut and their waste matrix stripped away. The label remains on the release liner, thus offering a high variety in label shape. The release liner facilitates high application speeds due to an accurate and clean reel fed dispensing.

But the linerless technology is gaining momentum on finding the right solution for linerless primary labels. Less material involved, linerless can contribute to a lower carbon footprint and reduced

packaging waste – a smart environmental, economic and functional alternative to typical label applications.

Linerless labels with process liner for dispensing

This technology requires a special die cutting equipment where linerless labels are laminated to a process liner. After dispensing the labels with a standard label dispenser, the process liner is rewound and can be reused several times then being recycled.

Characteristics and advantages

- Cutting tool for each packaging line needed
- Process liner for dispensing is reusable
- Front and back printing

- No attach point on label shape
- No micro perforation
- No limitation in label shape

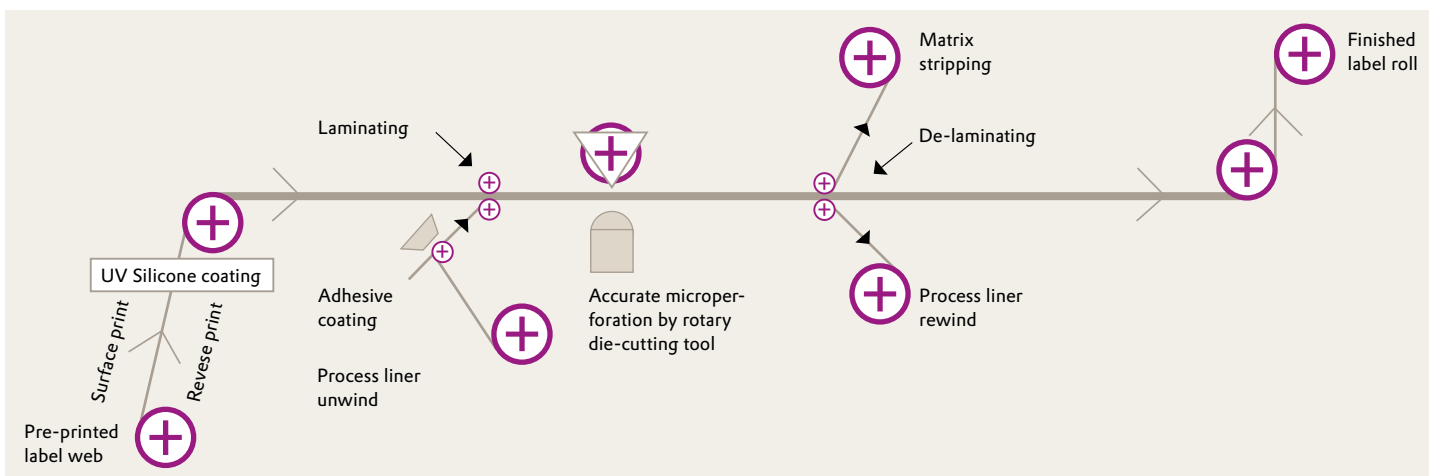
Linerless labels with micro perforation

Micro perforated linerless labels are ready for dispensing utilizing a modified dispenser.

Characteristics and advantages

- Full “in-line” label finishing
- Front and back printing
- Easy retrofit of dispenser, interchangeable to standard label dispenser
- Laser printing of variable information prior to dispensing possible
- No liner for dispensing needed
- Some limitation in label shapes
- High accuracy label positioning

Linerless conversion with microperforations





Evonik Corporation, USA recognizes the importance of environmental issues to our customers, and is proud to be a certified member of the TLMI L.I.F.E.® program since 2015.

Photo: cycle4green ltd

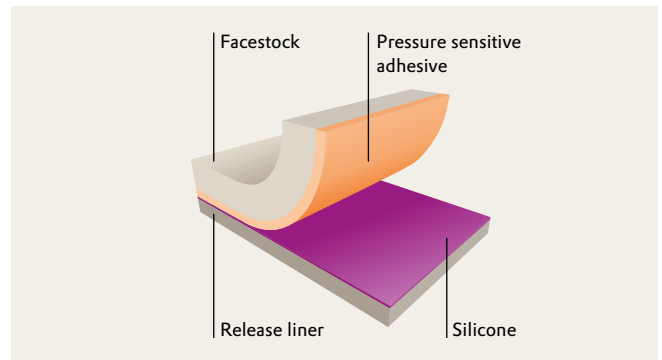


Labels without a liner!

Labels play an important role in today's economy. In 2013 the global production of labels was well above 40 billion square meters and is expected to be growing with more than 4% for the coming years. Nearly 40% of all labels produced are pressure sensitive labels, a powerful and cost effective means of labeling for many applications. The label is held in place by a release liner which allows for a high speed and high precision labeling process. However, the release liner has two important disadvantages – it costs money and becomes waste after the labeling process. For Europe, the annual consumption of release liners is estimated to be around 400.000 metric tons, the majority of this is going into landfills. In today's world of sustainability, preservation of natural resources, energy efficiency and waste prevention, the development of a true linerless label is of growing importance for the label industry.

Traditional pressure sensitive laminate

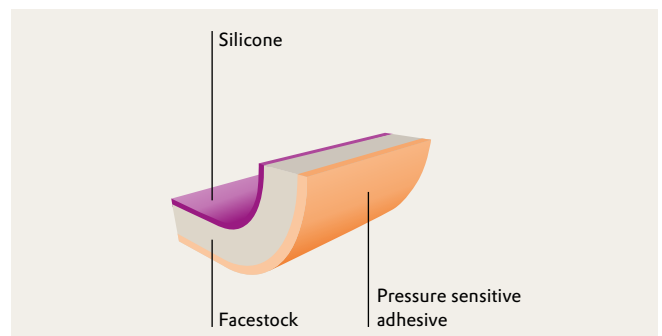
Today pressure sensitive labels consist of a silicone coated release liner, an adhesive and the facestock. After the label has been applied, the release liner becomes waste.



The linerless concept – No waste

The idea is simple, get rid of the release liner and get the release by coating Evonik UV silicones on the printed facestock. This simple idea offers significant advantages:

- No release liner waste
- No release liner cost
- More labels per roll
- Less transportation costs
- Less storage space needed
- Less downtime in label production



www.evonik.com/tego-rc



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