

SIMPLE

but far from stupid

Imagine a roll of household tape and you can picture how linerless labels work; they are pressure sensitive labels without a release liner. From an environmental standpoint, they are a great labelling option with reduced waste, freight, storage and disposal costs. But there are several technical and printing limitations.

Out of the total pressure sensitive label market (total volume of 27.5 billion sq m), just 5 per cent are linerless. Demand comes from North America (49 per cent), followed closely by Europe (43 per cent) and Asia (8 per cent). Linerless labels are wound on a roll that has the release coating applied to the front of the facestock. This prevents the adhesive, applied to the underside of the facestock, from sticking to the label below it on the roll.

There are two categories of linerless label: labels for primary products, and variable information print (VIP) linerless. The former are preprinted with text and branding. VIP encompasses different printing technologies, allowing on-demand print of readable data, barcodes or graphics on items.

Nowadays, with mass customisation, it is a growing requirement for both consumers and manufacturers to allow the identification of a product and item as well as a component. VIP linerless labels are very developed in the US, with the country commanding more than 65 per cent of global volume, whereas primary linerless labels volumes in Europe account for around 60 per cent of global volumes, according to figures presented by Anum Javed Beg, market research manager for Alexander Watson Associates, at a recent seminar.

By end-use application, 35 per cent of linerless labels globally go into wrap and sleeve packaging for food, 19 per cent to warehousing and transportation, 19 per cent to weighscaling and 9 per cent to fast food.

While the majority of linerless labels by material are paper, 24 per cent of the 1.32bn sq m volume is film. The US uses the larger proportion of paper, while in Europe film is predominant. Hot melt is by far the most used adhesive, with 70 per cent of the market, while water-based contributes 22 per cent and the rest is hot melt UV curable.

If we focus on the expected global linerless market volume growth rates for the coming years and compare them with historical rates,

Right: Linerless labels can now be printed in any shape or size, according to ETI Converting Equipment



Sticking to themselves, and so avoiding waste, linerless labels are emerging players in the packaging market. But are they worth the hype, or are they just the latest marketing fad from the label industry? **Dominique Huret** attended an Alexander Watson Associates seminar to find out



Above: More than a third of linerless labels globally go into wrap and sleeve packaging for food

the outlook looks promising, but slightly different region-to-region.

In volume terms, the global market for linerless enjoyed a 12.6 per cent annual growth rate from 2019 to 2020. This growth is expected to continue until 2023 with a yearly growth rate of 12.2 per cent, slightly below historical levels, but still promising.

These trends differ noticeably when looking at the three key continents. In Asia, the favourable volume growth trend of 6 per cent for 2019 compared with 2020 will continue at slightly higher annual levels of 6.2 per cent until 2023, said Beg.

In North America, the impressive 15 per cent volume growth rate of 2019 to 2020 will stabilise around an annual 14.8 per cent growth rate until 2023. Europe's growth will be 10 per cent per annum up to 2023, compared with its historical 11.2 per cent volume growth rate of 2019-20.

Material gains

Boosted by burgeoning demand across end-uses such as grocery labelling, logistics and quick-service restaurants, the direct thermal

linerless market has seen approximately 15 per cent year-on-year growth in recent years.

UPM Raflatac has invested in linerless as a natural continuation of its product and technology development work, and cites a 40 per cent reduction in material usage as a clear sustainability benefit.

“Our €13 million (\$14.6m) investment in Nowa Wies, Poland includes a new linerless coating line and increased slitting and packing capacity,” explained John Lenck, director of new and emerging technologies at the company. “This increases our Direct Thermal (DT) linerless annual production capacity by 100 million sq m.”

The production line was expected to be operational at the end of 2021.

Another company with sustainability at its core is Brazil's Fedrigoni Self-Adhesives, with global product manager Sergio Veneziani explaining that the merger of Ritrama, Arconvert and Manter led to the creation of its Fedrigoni division, specifically for the design and production of self-adhesive labels.

“Our company strategy is to ensure the environmental compatibility of products and



processes, to avoid waste and to reduce the amount of material needed to make the label," he told seminar delegates. "We are working hard on developing recycling solutions for mono-material packaging. Core Linerless Solutions is our latest technology, which creates a complete material-machine platform to produce linerless labels."

This, said Veneziani, solves the problem of having to dispose of a huge quantity of siliconised material, with ever-increasing collection and recycling costs. The silicone liner is not discarded but becomes the lamination of the product, while the aesthetic quality also gains in impact, without requiring surface treatments or new printing technologies.

"Core Line Solution is extra thin, a 30-micron PP, 12-micron siliconised PET multifunctional smart liner and a high-performance, transparent acrylic adhesive," he said. "This is half the thickness of traditional laminated PP structures. It eliminates the gap separating one label from the other, saving a lot of material and avoiding the production of waste."

As for what the future will bring for linerless, Remco van der Velde, international business manager for Maan Engineering, identified six major trends: increased use of PP and PET foils; further development of dedicated linerless paper with a focus on price; lower levels of silicone in the release coating; emergence of activatable linerless labels; a strong increase in the use of UV hot-melts; and the development of wash-off and biodegradable glue.

As for applications, van der Velde said he expects more brand owners to include linerless labels in their investment plans, followed by applicator suppliers. This will result in growth of the VIP segment, especially in warehousing, logistics, fast-food and

in-store labelling. For Maan, the primary segment will also develop for beverages, household, cosmetics and pharma.

Sharing the inside track on linerless manufacturing, Maxime Bayzelon, president of ETI Converting Equipment explained that for years the technology was used strictly in hand-applied applications, until innovation enabled inline die-cutting systems to be retrofitted to existing labelling equipment.

"You can now print linerless labels in any shape or size," he said. "The cost of release liners could represent up to 35 per cent of the entire cost of a pressure-sensitive construction. This is expensive, considering that it will be discarded."

Bayzelon presented pre-glued wraparound labels as a new opportunity for bottles and cans, calling it a perfect alternative to roll-fed glue-applied labels, and promising a new revenue stream for label printers.

"There are two benefits: trouble-free application at the bottling plant, and less downtime," he said.

Finally, Chrisitan Eger, head of innovation management for radical curing silicones at Evonik, presented the company's linerless auto and hand-applied labels.

"In sleeve labels, we offer decorative labels running on an automatic machine, with low-tack adhesive," he explained. "Our thermal labels are made for hand application with slow printing speeds. And we are starting in the print-and-apply segment of fast printing speeds with higher tack, which are important for e-commerce."

According to a 2020 FINAT survey, 53 per cent of participants said they have the most interest in linerless labels, ahead of in-mould labels (22 per cent), and shrink sleeves (16 per cent).

"More than half of brand owners and packaging buyers want linerless labels," concluded Sarah Efat, market segment manager for release coatings at Evonik EMEA. "They are considered the number one innovation topic for converters." **P**

Plastics in Packaging

Plastics in Packaging is an ongoing source of information for the flexible and rigid packaging industries

FOLLOW US ON:



LinkedIn



[linkedin.com/company/plastics-in-packaging](https://www.linkedin.com/company/plastics-in-packaging)



twitter



twitter.com/plasticsinpkg

[plasticsinpackaging.com](https://www.plasticsinpackaging.com)