

TOTAL RECALL

France was the place to go for all things reusable and returnable late last year.
Jean Schurus reports from Paris



After a four-year enforced hiatus, All4Pack Emballage Paris returned at the end of last year with 1,100 exhibitors from 80 countries and an attendance of nearly 45,000.

Perhaps one of the most notable differences from the previous edition of the show was the focus on new business models to reduce the impact of packaging. And, when it came to returnable and reusable plastics containers, there was also an abundance of innovative developments – including mono-material dairy PET preforms, bio-based stretch film, and self-heating or cooling pouches.

The return of the returnable

Partly due to the pandemic, reusable and returnable packaging seemed to have lost a bit of traction of late, but that is changing rapidly. Against the

backdrop of the European Green Deal, France's strict Anti-Waste for a Circular Economy Law – aiming to progressively ban single-use plastics, reduce waste and promote new consumption patterns – has started to make itself felt.

Since the beginning of the year, restaurants with more than 20 seats in France have been required to provide reusable tableware for table service. This is a massive transformation that makes the country a global trailblazer. The Macron Government announced one year of flexibility, but the industry is required to show signs of goodwill.

For the fast-food industry, it is perhaps the biggest transformation since its invention in 1940 by the McDonald brothers. Several countries are following suit, with England set to ban disposable cutlery at the end of

2023. These changes were illustrated by several innovations at the All4Pack show.

Packaging and containers used in schools, hospitals, retirement homes, supermarkets and, of course, fast-food establishments are targeted. To cater for these new reuse needs, French company Leygatech, in partnership with Genomat, has developed the Thinox, a lidding solution for reusable containers.

“Our PE film bears the necessary barriers and is 100 per cent recyclable,” explains Thierry Bonnefoy, Leygatech chief executive. “It can be sealed on stainless steel, glass, ceramic, and porcelain. This film complies with the requirements for strong seals (greater than 250-bar), sealing through contaminants and removal of sealant on cleaning. Today, in collective settings (office canteens, association restaurants and sports

club cafeterias) the use of stainless steel, glass or other containers involves hermetic lids, which are often heavy and expensive.”

Another company servicing this area is Lyon-based Firplast, which has created R'Box containers, made using the thermoplastic polymer polybutylene terephthalate (PBT) to provide solidity, durability, and what the manufacturer calls ‘responsible’ packaging.

There were several reasons Firplast opted for PBT material for the container, according to director-general Michael Merran. “PP containers do not pass the bacteriological test, because the joints and scratches can be nests for bacteria,” he explains. “Recommended by French producer responsibility organisation Citeo, we chose PBT, which is resistant to temperature shocks, and is perfectly adapted



Above: Leygatech has developed lidding films that offer barrier and recyclability. **Above right:** Firplast's Michael Merran says that PBT is perfectly adapted to industrial dishwashers. **Below:** Plastics are ideally suited to dairy products that are sensitive to oxidation. **Below right:** SGT has partnered with Avient to produce a preform with very low mineral content



to industrial dishwashers. It resists about 300 microwave passages and dishwashing sessions. However, for the lid we opted for PP, but with no joint or angle."

At the end of their life-cycle, the containers can be returned to Firplast for recycling into other non-food product categories (such as fast-food trays and office partitions). These packages have been developed for restaurateurs in order to offer a universal range that responds to all the problems of transport, conservation and reuse.

"This year, we will be producing the R'Box container in another polymer range. It will be transparent and the price range will be around €4-5 [\$4.3-5.4] for both container and lid."

White is white

Not-for-profit company Citeo, which was created by the

merger between Eco-Emballages and Ecofolio with a view to reducing the environmental impact of packaging, recommends that when using rPET, the mineral content of colourants/additives should be below 4 per cent in order to limit the degradation of its core properties.

SGT, a specialist in PET and rPET preforms and HDPE caps, has partnered with colourants producer Avient to produce a single-layer preform with very low mineral content. The SGT preform is intended for the dairy market and has a 38mm neck. It also incorporates the ColorMatrix Lactra Four One Zero additive, which Avient claims offers both superior whiteness in the bottle and a high level of protection for photosensitive liquids.

The ColorMatrix formula blocks up to 99.9 per cent of light, even with a low wall

thickness of 200 microns. Dairy products such as UHT milk, which are sensitive to oxidation, are therefore protected and kept fresh for up to six months without altering taste or other sensory and nutritional properties.

The recyclable single-layer preform can be integrated into a closed bottle-to-bottle loop and can contain up to 100 per cent rPET. The entire 38 mm neck range can be produced in a single layer, with light-weighting possibilities, and it adapts to all production lines.

"The innovation lies in the fact that is a mono-material preform with guaranteed recyclability, with white rPET and full barrier properties," says Gilles Bouguen, SGT development director. "After years of plastics-bashing, there is an obvious renewed interest in PET and rPET across the dairy sector. >>>

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Michael Merran, Firplast

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“After years of plastics-bashing, there is an obvious renewed interest in PET and rPET across the dairy sector”

Gilles Bouguen, SGT

A new dairy company will start here in France early this year, first in virgin PET and then in rPET. But, for several years we have been working with Lactalis Canada on its UHT white PET bottle.”

Whether you like it hot or cold

Self-heating and cooling technologies have come and gone over the years in the packaging industry, and a new innovation called ‘Shake it’ was premiered at All4Pack.

Presented by the French firm Bopak, which specialises in equipment for Doypack pouches, Shake it comprises a flexible pouch with two hermetically separated chambers: one containing the product to be consumed, and the other a specific liquid solution.

An exothermic mix of sodium chloride and water heats the liquid safely while an endothermic solution of calcium oxide and water cools it.

“The reaction occurs when the water capsule inside breaks and comes into contact with the active products,” explains Jean-Philippe Henriët, owner and managing director of Bopak. “Of course, there is a safety valve, essential to avoid any accidents since the temperature can rise to 100 deg C. The heat is absorbed by the liquid.”

In October 2022, Bopak licensed Shake it to an Italian producer of instant coffee. “We saw a huge potential in beverages, edible compounds, meals and other liquids, as it is able to self-heat or cool down in a very short time,” adds Henriët. “Survival and humanitarian rations, and products for hotels are other opportunities. At the moment, the pouches come from Italy and are – since the start of this year – made of mono-PP.”

Heads up!

Sempack’s mono-material flexible pouch, meanwhile, can stand upright, head up or down. It can also hold a variety of liquids, gels, pastes, powders or dry goods.

According to the company, the PP pouch is lighter than the vast majority of competing packages: 38 per cent lighter than a Doypack, 53 per cent lighter than a rigid bottle and 73 per cent lighter than a tube. The pouch is very compressible and has a 99 per cent recovery rate. Currently under investigation is the possibility of reuse after washing.

The packaging and its process are 100 per cent made in France and patented in 33 countries.

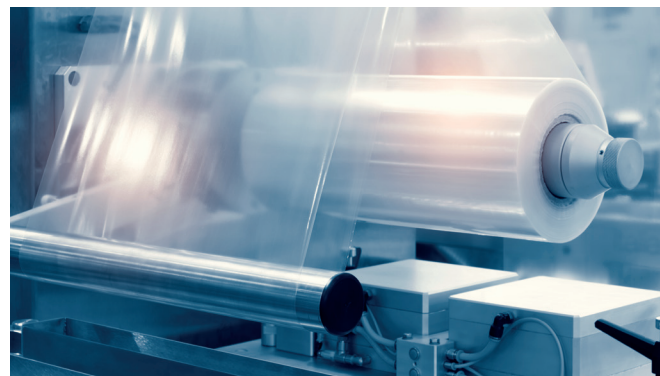
And, to wrap it all up

France’s Getra showcased its latest industrial stretch film – FE23 Biostretch – which is said to be biodegradable, compostable and recyclable according to the EN13432 standard.

FE23 has its own certification number that guarantees a genuine, controlled and approved procedure, according to biodegradation legal standards. The organic materials



Top: Gilles Bouguen, SGT development director. Above: A new dairy company will start in France this year, first in virgin PET and then in rPET. Above right: Jean-Philippe Henriët (centre) is expecting a hot reaction from the market with Bopak’s ‘Shake it’. Below: Sempack’s mono-material flexible pouch can stand upright, head up or down. Below right: Getra’s FE23 Biostretch uses various by-products sourced in France





Above and below: Getra's manager of banding, Xavier Decaris, illustrates the company's FE23 film, which is certified for food-contact



are starch, thistle, beet and rapeseed oil. All are by-products sourced in France.

Getra says the film is used like any other stretchable film in manual or automatic mode with a pallet-wrapping machine, but it keeps its technical properties – elongation, tackifying, secure holding of packages during transport, and transparency for optical barcode control tools.

FE23 is available from 12-30 microns on 50-76mm rolls, and it is certified for food-contact.

“A few precautions need to be taken,” advises Marilyné Pêché, head of marketing and communication at Getra. “Temperatures during transportation and storage must not exceed 60 deg C at any time. The pallet weight can go to 600kg with about 40 rolls per

pallet, and the film should be stored away from moisture for no longer than 12 months at room temperature [23 deg C]. Following these instructions is important, because otherwise it might result in a loss of properties and processing difficulties.”

Getra’s first customers are in the barrel and wine industry segments, as well as in the collective catering area. But, according to Pêché, all pallet users are potential customers, which is a huge market.

“The price of FE23 is around €14-15 (\$15-16) per kilogram,” she explains. “Of course, it is more expensive than most stretch film, but this is local, hydrocarbon-free and sustainable. It also gives back its biogenic carbon to soil by composting.” **EP**

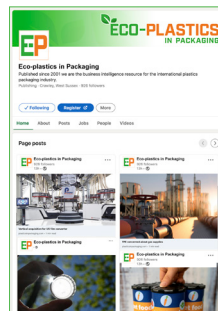


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