



Alufoil: wrapping confectionery for over a century

If you asked most Europeans of any age for a list of their favourite things, about life's little luxuries, most would have chocolate, or some form of confection, near the top. And that goes for the inhabitants of many other countries too!

Since Mr Tobler began to wrap his famously shaped chocolate bar with aluminium foil in 1911 in Europe, the material has been a favourite with many in the confectionery sector. There are several good reasons why foil has remained a material of choice for chocolates, as well as many other confections. Of course it looks good and reflects the shine of quality many chocolatiers and sweet manufacturers want to see associated with their product.

But the practical reasons for using foil are very important too! The barrier properties of alufoil – keeping the contents of the pack free from odours, light, heat, gases and moisture are vital to make the delicious products easy to distribute widely and store over lengthy periods, while staying in the very best condition.

However it is the deadfold property, together with its decorative excellence which makes aluminium foil an ideal partner for confectionery. Whether it's a coin, an Easter Bunny, Mozart ball, chocolate soldier, or Santa Claus, foil can be wrapped around the moulded shape and printed perfectly. For on-shelf impact there is nothing better!

Chocolates in particular are a perfect gift on special occasions, for example birthdays, anniversaries and as festive gifts. Sadly in the last 18 months many of these occasions have been missed due to the pandemic. But, contrary to what might be expected, chocolate consumption has actually increased in that period, although in more traditional formats, such as tablets which has prompting some innovation in the premium chocolate sector.

This issue we look at some fun facts about chocolate and take a snapshot of some distinctive packs with alufoil content: examples of the strong and enduring partnership between the product and alufoil packaging. ///

Domestic recovery boosts European aluminium foil deliveries in first half of 2021

Following solid first quarter growth, led largely by exports, the second quarter of 2021 saw domestic deliveries of aluminium foil accelerate rapidly (+8,8%) as European demand recovered from the pandemic crisis. Exports declined slightly but were more than offset by growing internal demand. At the halfway point of the year total deliveries reached 488.900 tonnes, 3,4% ahead of the first six months of 2020, according to figures released by the European Aluminium Foil Association (EAFA).

Production of thinner gauges, used mainly for flexible packaging and household foils, was slightly ahead in Q2, compared to the year before, contributing to an overall H1 increase of 2,5%. Thicker gauges, used for semi-rigid containers, technical or other applications, put in a strong performance, with double digit growth of 12% for the April-June quarter and a half year result 5% ahead. This is a dramatic turnaround compared to the -13% of Q2 2020 and -4,4% seen at the halfway point last time. ///
[For more alufoil statistics click here](#)

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Chocolate

Facts about chocolate



Did you know:

- White chocolate isn't really chocolate, as it doesn't contain cocoa solids or chocolate liquor, only parts of the cocoa bean – mainly cocoa butter.
- The scientific name for the cocoa tree is *Theobroma cocoa*, meaning "food of the gods".
- The first recipe for 'eating' chocolate was invented in the UK, in 1847, by Joseph Fry.
- Rudolph Lindt designed the first conching machine, its bed curved like a conch shell.
- Chocolate is the only edible substance to melt around 30 to 32 C, just below the human body temperature. So it melts easily on your tongue.
- According to the International Cocoa Organization, Europeans account for almost half the world's chocolate consumption.
- The blood in the iconic film *Psycho*'s famous shower scene was actually chocolate syrup.
- It takes 400 cocoa beans to make half a kilo of chocolate.
- The average serving of milk chocolate has about the same amount of caffeine as a cup of decaf coffee.
- Most cocoa – 70% – comes from West Africa, with an estimated 1.5 million cocoa farms.
- Worldwide, 40 to 50 million people depend upon cocoa for their livelihood.
- Spanish royalty gave cakes of cacao in their dowries.
- The French celebrate April Fool's Day with chocolate-shaped fish, or "Poisson d'Avril."



Foil turns Kisses into Grinches

One of the most famous chocolate treats in the USA, Hershey's Kisses and Dr. Seuss's *The Grinch* have come together in 2021 to make a festive treat that would even make the Grinch's heart grow three sizes. The milk chocolate Kisses are covered in 10 limited-edition alufoil wrappers, inspired by Grinch and his trusty sidekick, Max.

Aluminium foil has been used to wrap these teardrop shaped chocolates since the mid-1900s and this was only interrupted in WW2 due to a shortage of aluminium foil. The first wrapper was the usual silver-coloured foil and Hershey's Kisses were only available in this for decades. Sixty million Kisses are made every single day.

In 1962 Hershey became one of the first companies to change its wrappers for seasonal sales. Today the advance of printing techniques means, at holiday times, wrappers can even turn into a Grinch! ///



Chocolate

Premium chocolate bars get perfect wrap

For the first time in its history, Ferrero is entering the premium chocolate tablet category. The company's famously round Rocher and Raffaello brands can now be enjoyed one square at a time, thanks to a new bar format being rolled out across Europe this autumn and globally in 2022.



The first Ferrero Rocher was launched in 1982, when the iconic shaped balls of luxury chocolate were entrusted to alufoil's safe keeping, where they have been ever since.

The company spent 3 years developing a 90g bar for both brands, with seven delicious flavours, introducing a new way to experience Ferrero Rocher and Raffaello. The launch into the fast-growing premium chocolate tablet category will reinforce Ferrero's competitive position within this market, it says.



Following the trend for chocolate of all kinds in tablet format, Lindt, the premium Swiss chocolatier has introduced EXCELLENCE COCOA PURE, the first



bar of its kind made 100% from the cocoa fruit. For this new Lindt EXCELLENCE limited edition, all ingredients come from the natural cocoa fruit for the first time – without any other ingredients, including refined sugar.

In order to create this pure cocoa delight, the intensive cocoa note of the cocoa bean (82%) is combined with the subtle fruity, exotic and sour note of the pulp (18%) the company says.

To ensure these iconic premium products are kept in the best possible condition the new bars are enclosed in an inner wrap of aluminium foil, which protects their unique flavour and texture, thanks to alufoil's unmatched barrier properties. ///

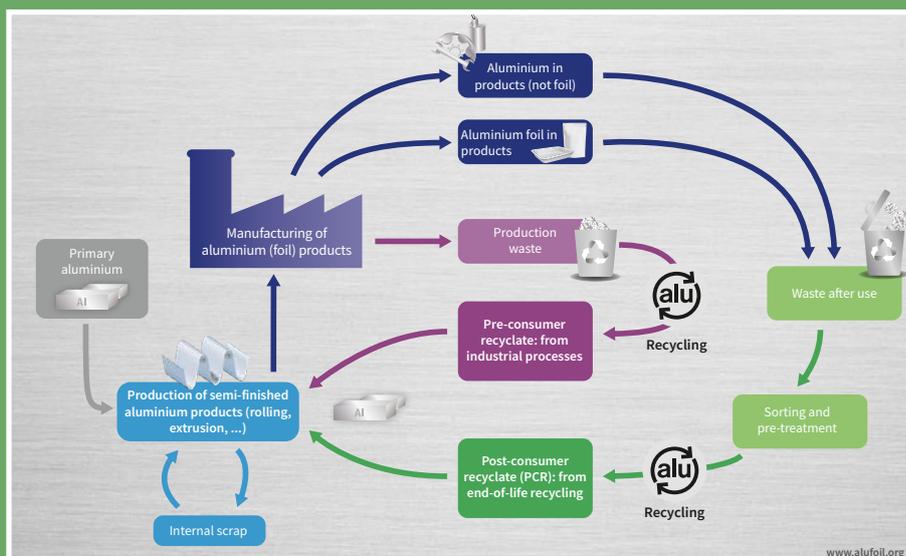
Keeping aluminium (foil) in the loop

There is much talk these days of the circular economy and how important it is to recycle, reuse or repurpose as many of the materials used in everyday life as is possible. As a primary packaging material, as well as its many other uses, aluminium foil is seen as a major focus of these efforts.

Fortunately alufoil is infinitely recyclable, so to establish a 'loop' to recover and reuse, while challenging, is entirely possible. EAFA has introduced an interesting graphic to show how recovery of this valuable material can be achieved. It also shows how aluminium, derived from other industrial products, can be recovered.

Once the primary process to produce raw aluminium has happened it is sent to converters for the production of semi-finished goods, such as foil. Even at this stage, the scrap which results from converting is carefully collected and re-introduced into the system.

In the case of foil, it then goes to be manufactured into a huge variety of products, such as



trays, lids or other packaging formats, as well as 'non-foil' products containing aluminium. Again, any waste generated at this stage can be collected and re-introduced into these production processes.

Following their use, these alufoil products then become 'waste' and should enter the recycling

stream at the 'end of life' stage, for sorting and pre-treatment. As the recycling systems improve and increase, more and more aluminium foil can become post-consumer recycle (PCR) which is then fed back to the converters to begin again the journey as foil, or other products. So, the loop closes and the cycle of use and recovery and reuse starts all over again!

Sustainability

New recycling technologies improve alufoil recovery rates

While it is well established that aluminium is fully recyclable, the many formats in which it enters the waste stream means that recovery is not always straightforward. At a recent seminar, organised by GLAFRI, the Global Aluminium Foil Roller Initiative, some of the latest technologies were presented and revealed just how much is happening in this area to boost both sorting and recycling. Here we look at what the experts said.

PreZero Pyral and Reikan Group, based in Germany, are recovering between 60-65% of all the light aluminium packaging in Germany. PreZero Pyral uses a unique pyrolysis process which re-processes aluminium-bearing waste by thermal and mechanical means in an efficient and environmentally friendly manner, they say. Organic substances can be separated from aluminium without the use of oxygen. Using relatively low temperatures (500-550 °C) all of the aluminium present is preserved, while it is cleaned from substances such as ink, foils, paper and plastic labels or food residues.

The really special feature of this pyrolysis is that it makes use of the gases produced in the process, reusing the thermal energy produced. The organic material burned onto the aluminium is converted into a synthetic combustible gas which, after purification, is returned back to the process circuit as a source of energy. The result is that the PreZero process is recognised as a model for resource and energy-efficient aluminium recycling. The company also offers the Pyradec system, which is based on fluidized bed technology.



PreZero Pyral's process recovers 60-65% of all light aluminium packaging in Germany

The Advanced Mechanical Recycling solution, from German recycling technology company saperatec, can delaminate polymer and metal films in flexible packaging materials. The process separates these materials into secondary raw materials without substantially changing the material properties. As aluminium is still one of the best performing barrier materials in polyolefin

flexible packaging, with many key advantages, there is a pressing need to find a way to extract it. While eddy current sorting can do this separation, only the aluminium content of this high-performance packaging material is re-circulated. The plastics share – often more than 70% – is at best used for energy.

With saperatec's process, specifically designed



saperatec's process can delaminate polymer and metal films, then separates each into secondary raw materials for recycling

separation fluids are used to de-bond the metal and polymer layers. These separation fluids are water-friendly chemical formulations circulating in the process to minimize chemicals consumption. The aluminium is sent for recycling, while the polyolefins are mechanically treated to produce film-grade recycled plastic pellets.

Enval, as we discovered in Infoil 58, focuses on its proprietary technology known as Microwave Induced Pyrolysis. This patented pyrolytic process uses energy provided by microwave rather than gases to heat up the material and separate aluminium from the plastic.

The secret, says Enval is to use carbon, a highly efficient microwave absorber, to absorb the energy and then transfer it by conduction to the plastic, providing a very efficient heat exchange. A key advantage of this process is that it permits the construction of compact, modular units



Low carbon aluminium – Enval uses microwave energy and carbon to absorb that energy

which are economically viable at relatively modest throughputs. This allows the ideal recycling scenario: installing plants to treat locally generated waste.

The Fraunhofer IVW, in cooperation with Creacycle, has developed the 'CreaSolv' process, a solvent based technology, also referred to as dissolution or solvent-based purification. It is capable of separating multi-layer-composites (MLC) and may serve a tailor-made solution to the MLC and aluminium issue, they believe.

In 2020 Fraunhofer started a GLAFRI initiated and co-funded research project to investigate the benefit of solvent-based recycling for the recovery of polymers and aluminium from sorted aluminium fractions in detail.

Following extensive trials the recycling study clearly demonstrated both the technical and economic feasibility of the CreaSolv system to recover polymers and aluminium from post-consumer non-ferrous metal fractions. Further upscale activities are now planned.



Alu-flexibles input Alu residue
The 'CreaSolv' process separates multi-layer-composites

Overall the seminar demonstrated the very dynamic state of developments for sorting and recycling of aluminium, even from the most difficult composites. Clearly this an area where more R&D and investment will continue to reap benefits for both the industry and the environment.

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