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Rolling with the times

— When the first aluminium foil used as packaging was carefully wrapped around bars of Tobler chocolate in Switzerland, in 1911, and the following year for Maggi meat stock cubes, it is unlikely these pioneers realised what an amazing story they had started.

Today, more than 105 years later alufoil is still used extensively in the confectionery industry. But, of course, it is now found in a host of other packaging functions, from trays and containers for meat and ready meals, to blisters for pharmaceuticals, lids for many dairy products, lining for juice cartons and a range of other devices, including aluminium closures for an increasing large amount of the wine and spirits market.

Aluminium foil has stood the test of time because it has moved with the times through innovation and design to meet the needs of 21st century packers. In fact only the wooden box, tin can and glass bottle/jar can truly be said to considerably pre-date alufoil as a packaging material. While cloth and paper are the oldest forms of flexible packaging – used initially to protect delicate items of value or to preserve small pieces of food – paper packaging, for wrapping and bags, was not mass produced until the end of the 19th century.

Of the 850,000 tonnes of aluminium foil produced in the EAFA region annually it is estimated 75% of this goes to packaging and household uses. The remaining production is used as insulation in engineering and construction, as well as other important industrial applications – making a profound impact in these sectors too.

So how has alufoil remained such a significant material for packaging use? Its performance characteristics are perfect for protecting delicate or perishable foods and pharmaceuticals and displaying things, like chocolates, to best advantage. It is lightweight, has incredible deadfold characteristics and protects the product from light, moisture and odour. Plus, properly printed and decorated with, for example, embossing, it can adorn a bottle of wine, an Easter egg or a yogurt pot with a high quality and high impact image.

Saving the best to last, alufoil is fully recyclable. It is estimated that 75% of all the aluminium ever produced is still in use. There is no other material which can claim that statistic.

In this 50th issue of Infoil we look at how aluminium foil has rolled with the times to stay at the very top of the packaging materials league. ///

Alufoil Trophy at interpack 2017

Don't miss out on this opportunity to ensure the widest possible audience, please get your entries to EAFA by **9 December 2016**. The winners will be showcased on the EAFA stand during interpack 2017. Details of categories and how to enter: *www.alufoil.org* ///

INSIDE

Celebrating 50 issues of Infoil – alufoil applications

The change from pull to twist!

Aluminium closures have been serving the spirits, oils and water sector for almost 50 years, providing over-caps and twist off closures – many containing features for security, easy pour and non-refill. But the sector has always had its eye on new markets for major expansion and since the beginning of this century, the aluminium closure has taken the traditional market for wine closures, where cork was king, and turned it on its head.

Their first mention in Infoil came in 2012, when EAFA welcomed closure makers into the Association and launched the Turn 360° campaign to raise awareness of the advantages. Since then they have featured regularly, particularly as winners of the coveted Alufoil Trophy.

Established markets such as water and alcoholic spirits remain strong. Expanding possibilities with design and new etching and embossing technologies, plus advances in tamper evident features, mean aluminium closures can form a vital part of the overall design. But the impact in the wine sector has been dramatic.

Today, conservative estimates say that the aluminium closure is already used on about 25% of the wine sold globally. Of course, it varies widely from market to market. But it is dominant in the New World wine category – so USA, Australia, New Zealand, South Africa and South America. Also it is making huge inroads into the traditional wine growing markets in Europe where more and more winemakers are realising the benefits on offer.

The aluminium wine closure beats the competition at every level of performance. A quick twist and you are into the delicious contents, no messy cutting off over-caps and inserting and pulling of corkscrews. Don't want the whole bottle? It is so easy to screw the cap back on and seal the wine perfectly safely for later. And it can be transported to and from a picnic or BBQ without any risk of spillage. The foodservice, catering and entertainment sectors, where most wines are served by the glass, have been quick to see these advantages.

But the industry is not complacent. Major technical advances have been made in all aspects of aluminium closure production. These include tamper evident features; versions which can be used on sparkling wines which guarantee pressure retention for weeks; a range of closures offering varying Oxygen Transmission Rates (OTRs) for vintage and fine wines; and the fact that no aluminium closure will taint the wine or break and fall into the bottle!

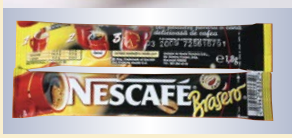
One of the most exciting areas of innovation is in design. The aluminium closure can be decorated with high quality printing, embossing and lacquering and this can feature on every part of the closure – which can come in an enormous range of base colours, as well as different surface finishes. Recently, the ability to offer a bespoke service, using digital printing, is possible. This allows winemakers and smaller spirit producers to design their own graphics and print very short runs – in effect complete flexibility!

And they are 100% recyclable. Thanks to modern techniques it is easy to separate closures from the glass fraction, so up to 50% are recycled already. There is no doubt that the new generation of aluminium closures are game changers. So let's twist again! ///

Lids and laminates revolution

Aluminium foil might basically look the same as it always has. But that shiny sheet of foil has undergone a revolution in the way it is used and how it performs. Even in the early issues of Infoil there are stories of laminates and coatings which have changed the face of packaging. This has enabled it to play a central role in the development of pouches, blisters and lidding applications.

In the mid 1990s the first pouches came on the scene offering a new way to pack both liquid and powdered foods, such as soups and sauces. The early stories already talk about these being 6 times lighter than conventional cans. Next were pouches which pass the 'freezer test' for juices – while offering excellent oxygen and moisture absorption. Over the years these laminates became more sophisticated, thinner, tear and puncture resistant, whilst offering superb printability.



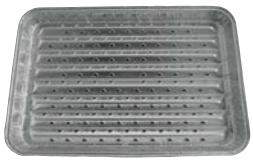
Soon they were incorporating easy open features, as well as reclosure. And, of course, the fact the new laminates with alufoil were retortable opened up yet more markets – such as petfood.

Celebrating 50 issues of Infoil – alufoil applications

Containers for all seasons

Aluminium foil containers come in all shapes and sizes. Thanks to the foil these can be designed to enhance the product shape, engineered to carry heavier items, decorated and embossed, as well as carrying out all the functionalities associated with the material, such as moisture and odour resistance, heat conductivity and an unsurpassed strength to weight ratio. But, like any modern material, it has had to find ways to adapt to new markets and opportunities.

Twenty years ago, when the first Infoil was published, the arrival of cheap air travel, the enormous popularity of ready meals and expanding supermarket demand for mass production for cuts of meat, ensured the latter part of the 20th century was a time of great expansion for alufoil trays. While the tray had been around a long time, since the 1960s in fact, these and other factors caused a surge in demand.



In the last two decades of the 20th Century pet food suppliers increasingly turned to alufoil trays as the pack of choice – replacing the can – and more and more products, such as pate and some fish delicacies found their packaging solution in foil. One of the issues of Infoil magazine from 2000 forecast the demand for petfood trays would soon reach 2.3 billion.

While pouches containing aluminium foil are also strong in this market, some 4.3 billion alufoil containers are currently used each year in Europe.

How quickly markets change! But convenience foods and ready meals for 'on the go' lifestyles means foil containers have found new ways to serve the food sector. And catering or food service outlets increasingly turn to aluminium trays for their strength and premium looks.

Prepared meals in aluminium foil were given a boost in 2006 when the Fraunhofer Institute proved beyond doubt that the material was microwave safe and, indeed, thanks to its excellent heat conductivity could ensure the food was cooked properly!

And it was not really until the 21st Century that Barbeques became so universally popular, opening up a whole new world of containers specially designed to reduce smoke and catch the fats and juices. Plus they offer the great convenience of going from the fridge directly on to the BBQ – no mess!

Looking to the present – and future: Who would have considered coffee (and even tea and fruit drinks) in a pod? Yet already they sell in billions and that will surely become tens of billions in the near future. So what is next?

Aluminium foil has stayed relevant and responded to these new challenges while still essentially retaining its core values. Primarily its excellent engineering capabilities and barrier features are even more relevant, with so many sensitive and perishable products on the market today.

Of course the fact that all these trays and containers can be 100% recycled is yet another unique characteristic – in Europe today more than half are recovered from the waste stream. So in this highly sustainable world the arguments for using them remains as strong and up-to-date as ever. ///

Not to be outdone the lids used on a variety of dairy and meat products, such as yogurts and patés became thinner, used non-solvent coatings and had resilience to puncturing. Yet they maintained their sealability, could be embossed and even printed on both sides, with capability to use heat resistant inks, while maintaining top quality sealing (and peeling) performance. These days many lids incorporate a pull tab to make it even more convenient.

While blister packs for pharmaceuticals have been around a long time (in 2012 as we saw 50 years of blister packaging celebrated in issue 40 of Infoil) the laminates used today can contain protection for the most sensitive medicines, including biopharmaceuticals. Indeed a recent development allowed a desiccant layer to be incorporated into the lidding foil, greatly prolonging the useful life of the product, even in extreme temperatures.

Aluminium foil (either pure or as a laminate) is a vital component of juice cartons and confectionery packs. It has facilitated hot-filling in a coquille pack, can be shaped to provide funky designs – such as pouches shaped as a football shirts (and printed in your team colours) or even stick packs. There has even been a foil perfume bottle.

In fact it is hard to find a pack format where aluminium foil does not play a useful and often a central role in the package. Even many bottles still use neck foil – made thinner to make it environmentally friendly. So as we revolutionaries like to say, Viva Foil! ///

Celebrating 50 issues of Infoil – sustainability

Sustainability – front and centre

Since the very earliest issues of Infoil the questions (and answers) about how aluminium foil plays its part in the sustainable environment, particularly for packaging, has been a key topic. Of course, 20 years ago the debate around 'sustainability' was narrower than it is now. Infoil has been a leader in addressing the issues with an holistic approach and offering the solutions as these have evolved.

Packaging was one of the first areas to be covered by dedicated EU sustainability legislation – the Packaging & Packaging Waste Directive from 1994. Due to its high visibility when becoming waste, packaging suffered from a bad image, so the focus was very much on dealing with this issue via increased recycling. Early Infoils reflect this, with a Sustainability Special in 2003 looking at some of the first initiatives to recover used foil and trays. But it also looked at a solar cooker featuring aluminium foil that was helping thousands families in areas of Africa where fuel and clean water were in short supply and how foil lids were offering huge savings in energy, materials and water.

During 2005 Infoil featured an article on the use of sustainable packaging materials as being just one aspect of society's quest to ensure the welfare of future generations. Items included pouches for cat food with a packaging weight as much as 90% lighter than alternative packs; a refill pouch for rigid shampoo bottles; and a lightweight silicone-coated aluminium foil that prevents sticky food sticking. So the magazine was already taking a more holistic approach to the whole issue of sustainability and can claim to be ahead of its time.

Indeed, while the term Resource Efficiency had not been popularised then, this was exactly what the foil lid from 2003 demonstrated. Now, almost 14 years later, the whole sustainability debate is wider, due to a more sophisticated view of what is good for the environment and society. This looks at all the resources involved throughout the life cycle of the packed product, not just the packaging material and recycling. To its enormous credit, aluminium foil has stayed absolutely central to the successful development of new initiatives and at the forefront of a more resource efficient Europe.

The pages of Infoil read almost like a history of the evolution of sustainable ideas. The notion, or concept, of resource efficiency was addressed very early (2000) with an article about source reduction from alloys and tooling, designed to make material savings. Soon after, another story highlighted a new blister forming technique which saved material. Every issue has some references to the subject, whether that was a lighter weight lid, a thinner gauge of neck foil, a tray which helped reduce cooking times, or energy consumption savings in production or performance.

Shortly after, Infoil put the spotlight on Life Cycle Assessments (LCAs), which EAFA commissioned from independent experts, conducted on a set of products packed with foil packaging. These LCA studies first appeared in 2008 for a family coffee pack and portion pack, followed by butter, (again a family pack and portion pack) and have since included yogurt cups with foil lids (2009), chocolate foil paper wrap (2009) and, more recently, sandwich wraps (2013). The results clearly demonstrate the limited impact of the foil packaging throughout the entire food value chain– on average accounting for less than 10% of the overall carbon footprint. This, coupled with its contributions towards reducing food waste, highlights that foil packaging saves much more resources than it consumes.

Tea light collection campaign with IKEA

In 2012 Infoil reported that EAFA had become a full member of the SAVE FOOD initiative having sat on the original advisory group. Launched in 2011 in partnership with Messe Düsseldorf, FAO and UNEP the initiative aims at fighting food waste on the Global level with packaging seen as part of the solution.

While Resource Efficiency is now seen as the broad vision, it remains clear to the aluminium foil industry, and Infoil, that recycling is an important means to support it. Improved recycling rates for foil products around Europe have been reported and analysed, initiatives to recover everything from trays to tea lights are a regular feature and it is pleasing to report here that closure recycling rates in Europe have, for the first time, exceeded 50%!

Infoil aims to reflect the overall objective of the foil industry, which is to ensure positive and competitive sustainability performances together with an aligned image and perception by stakeholders that foil is a responsible and relevant choice in the modern marketplace.

Perhaps this was best summed up in an Infoil from 2011 when the More is Less Report was the major topic. This paper faces up to challenge of creating a vision of the future for sustainability across the value chain.

Looking to the future, EAFA will continue to lead and support initiatives in order to optimize the overall sustainability performances of aluminium foil and its applications. The success of the first 50 issues in demonstrating how innovative and effective foil is as a leading resource efficient material will continue into the next 50 editions, as this is an evolving and never ending story of progress. ///

A clip from Italy's "Environmental Natives" TV commercial

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European Aluminium Foil Association e.V.

The international body representing foil rollers and manufactures of alu closures, containers, household foil and all kinds of flexible packaging.

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