



# infoil

EAFA European Aluminium Foil Association

www.alufoil.org

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## Spotlight on 100 years of innovation

— celebrating the future through the past



'There is nothing new under the sun' says the famous biblical expression, and although this may be true vast improvements are being made all the time. One of the most interesting facts of aluminium foil's 100th anniversary is that the foundations on which its introduction was based are as true today as they were in 1910.

Protection, convenience and cost were the major advantages for manufacturers in the early part of the 20th century. Additionally, although not talked about at the time, these attributes, alongside its

lightweight, were also responsible for advances in resource efficiency, something which is close to the heart of the supply chain today.

Conceived as a replacement for tin foil, the first rolling mill opened in 1910 and this was soon followed by the first ever alufoil wrap for chocolate. Famous chocolate makers, such as Toblerone, recognised that alufoil had a number of advantages including its barrier and aroma protection properties. Other examples included the dairy sector's recognition in the 1920s that alufoil was 20% more

economical than tin foil, and by the 1950s compartmented alufoil trays for TV dinners proved to be the forerunner of today's ready meals explosion.

Early successes with down gauging, an important element within today's environmental debate, took alufoil from thicknesses of 0.03 - 0.04mm in 1910 to 0.012mm by the 1920s; today thicknesses are as thin as 0.006mm. The figures certainly prove that alufoil's endeavours to save resources and cost are steeped in history.

The fascinating story and a look at some of today's innovations continues on the centre pages. ///

### Alufoil Trophy at interpack 2011

**Don't miss out** on this opportunity to ensure the widest possible audience, please get your entries to EAFA by 29 October 2010. The winners will be showcased on the EAFA stand during interpack 2011 (Dusseldorf 12-18 May – Hall 11, A37) so this is a golden opportunity to ensure the widest possible exposure for your products. Details of categories and how to enter: [www.alufoil.org](http://www.alufoil.org) ///



### Yoghurt – a sustainable approach

**EAFA's continuous efforts** to understand resource efficiency and the role of aluminium foil plays along the complete value chain are underlined by a new independent Life Cycle Assessment (LCA) on yoghurt packaging.

Conducted by ESU-services on behalf of EAFA, the LCA focuses on protection against spoilage and shelf life, essential attributes for perishable goods such as yoghurts and other dairy products.

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*100 years of alufoil*

# A century of development and global success

100  
years  
alufoil  
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— *There is no better way to celebrate the future than through the past. Here Infoil takes you from the beginnings of alufoil's history through to some of the breakthroughs in material structures and new market developments we are seeing in the new millennium...*

## Mighty oaks from little acorns grow ...

— 1910 – 1940: *chocoholics reap the benefits*



**It was thanks to** the foresight of Robert Victor Neher who opened the first aluminium rolling plant in 1910 at Kreuzlingen, Switzerland, and Martin Killiani, Aluminium-Industrie, who in 1890 forecast that aluminium sheet was better than tin foil for chocolate wraps, that alufoil became the success it is today. In 1911 Tobler started wrapping its chocolate bars in alufoil, and within a few years it began to use foil to wrap its unique triangular chocolate Toblerone, which had been launched in 1908. And by the 1920s and 1930s alufoil's influence had grown sufficiently to make real inroads into the dairy sector, particularly for butter and cheese. ///



## The appliance of science ...

— 1945 – 1999: *the breakthrough*

**With European** (and North American) markets catching on to alufoil benefits as a efficient packaging material, production quadrupled by the 1950s-1960s; with both rolling speeds and widths increasing dramatically to feed demand.

Nearly five decades old, the industry needed to ensure future development of rolling, processing and conversion technologies were based on solid scientific foundations.

Research with associated food technology institutes led to intensive investigations into the deformation of alufoil, the strength of heat-sealed seams and impermeability to vapour. These investigations



TV dinners led to explosive global growth for ready meals in which alufoil remains an essential ingredient

extended to composites and laminates including alufoil and paper, and/or plastic or cellulose film. And it was thanks to these advances that alufoil with its total barrier to light, moisture, and oxygen, and protection of flavours, was finding favour for perishable products throughout Europe.

For instance the first alufoil food containers were used for bakery products appearing on the market in 1948, soon to be followed by a variety of other foodstuffs. Landmark technical developments included the use of thin alufoil layers in aseptic cartons (Tetra Brik) in mid 1960s; the introduction of alufoil laminate tubes; and the first large-scale use of an alu/plastic laminate for a well-known effervescent tablet for headaches.

Importantly convenience foods first hit the headlines in the 1950s with the introduction of compartmentalised alufoil trays for TV dinners; and these forerunners of today's ready meals led to a global explosion in demand for microwavable, ovenable and dual-ovenable containers of which alufoil forms an important part.

By the end of the 1990s alufoil was accepted as an innovative material for almost all packaging applications with expressions such as "foil-sealed for freshness" on branded packs. ///

## Cooks' delight

*The positive protection household foil offers as an efficient and effective wrap to prevent food spoilage was recognised as early as the mid-1920s. Today it is an essential part of the modern household for cooking in the oven or on the barbecue, wrapping*



*food to prevent spoilage, reducing cleaning chores in the kitchen and many other uses around the home. It is also used in commercial kitchens from restaurants to schools and hospitals.*

*Today household foil comes in a range of widths and lengths while textured versions and non-stick versions have also been developed. An important achievement was the development of a household foil which is black on one side and transfers radiant heat efficiently; an ideal innovation for roasting meats and poultry. ///*

100 years of alufoil

## Age of convenience and resource efficiency

— the new millennium

**Come 2000 resource efficiency** and ever improving consumer convenient options were the major goals for converters, brand owners, retailers and ultimate consumers.

Successes in the down gauging of alufoil led to significant material savings of up to 30% for given applications. Alufoil's unique barrier properties are today being merged increasingly with flexible films to create lightweight packs with excellent preservation properties, and this has been instrumental in their use for a number of exciting new and expanding markets. To name just a few, pouches for everything from pet food to drinks; lidding applications; technically innovative solutions for pharmaceuticals; and the increasing acceptance of alufoil as a microwave safe material. ///

**Microwaves 'catch a winner'** - One of the latest products to appear on shelf in alufoil containers is Iceland Stores' new Catch of the Day range. Packed in containers from i2r Packaging Solutions each of its new fish dishes are served in a mouth-watering sauce and, says an Iceland TV advertising campaign, "Come ready to microwave in their own revolutionary foil tray." ///



**Pet projects for cartons** - An alufoil layer has long played its part in the production of aseptic cartons but it wasn't until 2002 with the launch of Tetra Recart that the first fully retortable carton system was introduced. Thanks to the specialised packaging material and the role of the foil barrier layer there have been a long line of successes for the system. For example, earlier this year Sweden's dog and cat food producer Lantmännen Doggy invested SEK65m in Tetra Recart following growing demand for its Bozita, Meow and Doggy wet pet food brands which are packed in the system. ///

**Firm favourites** - Drinks pouches with an alufoil layer for product preservation have become a firm favourite being both resource efficient due to their lightweight, and easy to use. Re-closeable drinking spouts, a variety of shapes and superior graphics mean drinks pouches are being chosen increasingly by brand owners. ///



**Unrivalled barrier** - Alufoil's barrier properties mean that it excludes moisture, oxygen and other gases, micro-organisms and light, all of which are essentials for pharmaceutical packaging. Blister packs benefit from its mechanical properties which, depending on the alloy and its treatment, can be made more brittle, tougher or more ductile. This married to consumer convenient designs to aid dispensing such as the handy pack for an anti-smoking aid pictured have made alufoil indispensable to pharmaceutical suppliers. ///

100  
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**Art by design** – Personality is an important marketing element for bottled beers, wines and champagnes with alufoil capsules or bottle neck labels giving a great visual effect. In this example produced for Einbecker Brewery by Constantia Haendler & Natermann the colour co-ordinated bottle neck foils help position the brewery's relaunched range of beers in the premium segment. ///



**Beauty by design** – Alufoil's aesthetic attributes form an important part of its journey to become the success it is today. Its bright metallic or matt finish plus its compatibility with printing technologies are all being used to great effect. The material's decorative appeal adds a sheen to



many pack designs creating exiting visual effects particular for cosmetics, confectionery and alcoholic drinks markets, where the striking alufoil tube from Huhtamaki (pictured above) for lemon vodka is used to great effect. ///

**Coffee Sensations** – The new millennium has seen explosive growth of consumer convenient single-serve coffee systems aided by a succession of innovative alufoil-based coffee pods featuring alufoil. Pictured is a new coffee pod and lidding system packed in an alufoil pouch. Produced for Casa Hausbrandt Espresso, a classical pack and machine concept, by Constantia Teich the ease with which the pod can be punctured allows the consumer to prepare a fresh and delicious cup of Espresso. ///



## Sustainability

# Environmental performance uncovered for yoghurt

— *LCA on yoghurt with alufoil lid*



**A recent independent** Life Cycle Assessment (LCA) has helped to understand in more detail the key role of alufoil-based packaging for yoghurt.

Perishable goods like dairy products need complete protection against spoilage, while shelf life is another essential when choosing a packaging solution. Attributes include barrier to light, moisture and oxygen, while alufoil lidding is also grease resistant and hygienic, has good machinability, excellent decorative potential and easy peel characteristics.

The LCA focused on the European market for

yoghurt packed in a polystyrene cup with alufoil-based lidding, investigated the environmental performance of the pack throughout its life cycle. This included the complete food supply system – milk production and its fermentation to yoghurt in dairies, and consumption patterns. It also examined the life cycle of polystyrene cups and alufoil from production through to packing, transportation and filling.

The contribution of retail packaging (cup and lid) varies between 8% and 15% of the global warming potential, depending on cup size and ingredients, to produce a low environmental impact. The greatest impact on the environment was the production of yoghurt; in particular milk production.

Refrigeration used in distribution and selling had the second highest impact, while the primary packaging and storage in the home and at the grocery outlet had the lowest impacts.



Efficient packaging with excellent preservation properties is essential for valuable food products such as yoghurt. Alufoil lidding helps to meet this obligation through its excellent barrier properties. For example, its barrier to light protects the sensitive contents from exposure to fluorescent lighting in refrigerated retail display cabinets.

Optimisation of packaging and lidding are areas where suppliers can help reduce environmental impact, says the study. Alufoil lidding suppliers have been active in this area producing a number of technical advances: foil thicknesses have been steadily reduced; advances in cutting technology mean less material giveaway; surface decoration techniques make shorter runs providing high quality multi-colour surface design possible; and advances in heat-sealing give excellent peelability

Alufoil is also fully and endlessly recyclable. The process requires 95% less energy than primary production providing enormous emission savings.

Executive summary: [www.alufoil.org](http://www.alufoil.org) ///

## Schools provide the WOW factor

— *Angel sculpture is the winner*

**Schools in the UK** county of Shropshire produced some stunning ideas when challenged to make festive sculptures from used aluminium foil and foil containers in a Christmas competition sponsored by Novelis UK and supported by Alupro, the not for profit Aluminium Packaging Recycling Organisation.

Wilfred Owen Primary School won the first prize in the Primary School category for its Dove of Peace Christmas Tree, and the William Brookes School won the Secondary School category with its Angel decoration. Both schools won £400 and the

William Brookes School was also treated to an educational tour of the Novelis plant in Bridgnorth, to gain a better understanding of how aluminium foil is manufactured.

The beautiful seasonal decorations were made from used aluminium foil collected in the schools. A variety of foil packaging was used, including yoghurt lids, take-away containers and plain foil used as sandwich wraps, and both schools demonstrated a real commitment to recycling and sustainability. Runner-up prizes were also awarded and the sculptures are being saved for Christmas



2010 or recycled. Shropshire Council invited all schools in the county to enter to create awareness that alufoil is infinitely recyclable. Kat Halstead, Shropshire Council's Waste and Recycling Advisor, commented, "Many people are aware they can recycle aluminium drinks cans, but forget you can also recycle household foil and foil food trays." ///



### EAFA European Aluminium Foil Association

The international body representing foil rollers, container, household foil and flexible packaging manufacturers.



— Find out more about alufoil! —

Visit [www.alufoil.org](http://www.alufoil.org) where you can find out all about every EAFA member, make business enquiries and see the latest news about alufoil applications and the industry.

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