

# The changing face of the soft drinks market

Contributed by Comstar International, 2007

In response to changing consumer needs, manufacturers in the drinks market are broadening their range of products and so bringing about demands in packaging materials. Comstar International looks into some of the new technologies available for this market.

Growing concern amongst consumers regarding health and obesity levels have resulted in the consumer now choosing healthier drinks such as mineral water, fruit juices, smoothies, sports and energy drinks, as well as milk. This has resulted in soft drinks manufacturers having to broaden their product range to offer the consumer a wider range of healthier drink options.

PET is an excellent choice to challenge existing packaging materials, such as glass, cartons and other plastics, to make good progress into these faster-growing sectors. The well-known advantages of PET - clarity, design flexibility, light weight and recyclability - combined with the numerous technology developments for PET, including O<sub>2</sub> and CO<sub>2</sub> barrier enhancement will continue to grow the future for PET packaging.

Beer also offers good opportunities for PET packaging. The technical barriers facing beer in PET have been largely overcome with the use of multilayer oxygen scavenging technologies. Continued growth is dependent on changing consumer attitudes and changing the views of the brewers to extend the reach of beer in PET.

The bottle uses multilayer construction incorporating an active oxygen scavenger for product protection from oxygen, while retaining the required level of carbonation. This barrier technology protects the fresh taste of the beverage and extends the shelf life of the package.

Since 2006 when PET had a 10 per cent estimated share of the European fruit juice and juice drinks packaging market, it has gained share quickly from liquid pack cartons and glass bottles. PET is also performing well against other polymers such as HDPE and PP due to its superior barrier properties, clarity and glass-like appearance.

Multilayer is particularly beneficial for packaging beer, where oxygen protection and CO<sub>2</sub> retention is required. Beer in barrier PET is regularly used at events and stadiums where safety is an issue. Forecasts for beer in PET shows continued strong growth. During the period 2006-11 the annual average growth rate for beer in PET volumes is 13 per cent worldwide, however this is much lower in Western Europe where consumer attitudes and brewers opinions remain cautious.

Monolayer

Active oxygen scavenger material in a monolayer structure extends the shelf life of many products ranging from juice and smoothies through to ketchups and sauces, extending product shelf life as far as 17 months (depending on the quality of scavenger used).

The monolayer bottle offers design flexibility without the risk of delamination, which can occur in some multilayer products. The bottles can also be designed in an innovative way that can incorporate functional features that enable the package to withstand 'in bottle' pasteurisation. Sensory evaluation of a PET monolayer bottle for a pineapple juice application revealed no difference from the glass benchmark after a period of 26 weeks (results supplied by Comstar International for its MonOxbar active scavenging technology).

The next step in Monolayer technology offers a high degree of clarity and exceptional gloss along with superior oxygen protection. The patented oxygen scavenger is blended directly into PET at the extruder to create a highly cost-effective monolayer structure. The technology provides significant design and processing freedom for preform and bottle, without the haze normally associated with Monolayer structures. Several grades of have been developed to meet specific market applications for oxygen protection. Aseptic Almost 50 per cent of soft drinks are aseptically filled in Europe in PET bottles. With an increase in the demand for non-carbonated drinks, aseptic bottle filling has become essential for juices, cold tea and coffee, sports and energy drinks, still water and milk products where their low pH makes them vulnerable to microbiological contamination.

Resin additives Increasingly the effect of UV light on certain beverage components can have a negative impact on colour, flavour and nutritional value. The use of UV protection is likely to grow as consumer packaged goods companies begin to understand the impact of UV light. Recent progress has included developments in both multilayer and monolayer to protect products including sensitive juices (i.e. pineapple, cranberry) and light beers.

Dairy has seen rapid progress for extended shelf life products from both a masterbatch additive and base resin prospective. Current development work includes the next stage of product protection for oxygen and UV protection for UHT applications.

Recycling As a high percentage of domestic waste is made of plastics, there is a growing interest in the recycling of plastics. It is estimated that some 90,000 tonnes of plastic bottles will be collected during 2007. Around 11.5 million homes can now take part in kerbside recycling collections; this equates to 47 per cent of UK homes. PET containers are

completely recyclable.

The use of recycled PET for food and drink contact applications is not so well developed in Europe as in the US. In December 2005, CCE and Boots both began in-store trials using bottles with a 25-30 per cent recycled polymer content. Both trials are part of a project funded by the Waste and Resources Action Programme (WRAP) in conjunction with Closed Loop London (CLL). WRAP was established in 2005 to investigate innovative processes for the recycling of post-consumer PET bottles. The aim of the project is to develop a more efficient recycling system that will reduce reprocessing costs for the production of food grade PET.

Polyester fibre is the largest market for recycled PET in Europe. The fibre market includes the following applications: padding for sleeping bags, soft toys and anoraks, fleece fabrics for sweatshirts and jackets, and other fibre applications such as carpets, upholstery for vehicles etc.