

PET-PANELLESS HOTFILL – A SOLUTION FOR THE MEDIUM SIZED FRUIT JUICE PRODUCERS



The share of fruit juice, filled in PET-bottles, has risen in the past years. Glass bottles and carton-box packaging have lost substantial market shares.

The world of fruit juice bottlers is split apart.

The main market share is dominated by a low amount of bottlers. One of the main reasons lies in the existing filling technology. In Europe large quantities of fruit juices are filled with cold aseptic filling equipment. Depending on the output, the investment of such filling lines can easily exceed 10 million Euros. Therefore this technology requires large filling quantities.

To maintain a sterile environment within the aseptic lines, equipment suppliers and the operators face major challenges in maintaining and running such lines.

Due to the simplicity of hot filling, the process is much more represented in other regions of the world, such as Asia.

For hot filling of PET special bottles are needed. To withstand filling temperatures between 80 and 90 °C, the bottles have to be blown in a special stretch blow moulding process. Besides the stretch induced crystalline, the bottles require an additional heat induced crystalline.

A great disadvantage of the existing hot fill technology is that the special designed bottles require panel areas around the bottle body. The bottles are difficult for labelling and mostly use shrink sleeve technology. In comparison to paper labels, shrink sleeves are four times more expensive.

In addition the weight of such bottles is much higher compared to the panelless PET hotfill bottles and bottles used in aseptic filling lines.

Together with a leading German fruit juice manufacturer E-proPLAST GmbH has developed panelless PET hot fill bottles. The appearance of these bottles is similar to the bottles filled in aseptic filling lines. The outside is free from any panel

structure and can easily be labelled with standard paper labels.

In comparison to the standard hot filled bottles, the PET panelless technology saves more than 16% in bottle weight. This reduces the bottle costs as well as the fee for the green dot label.

Due to the hot filling process, the oxygen barrier properties are improved by more than 14%. This will save special barrier materials and additives. Depending on the filled product, the date of expiry ranges between 9-12 months.

The hot fill technology is ideal for smaller production runs. A change over from one product to the next can be handled very effectively within the same filling line.

The majority of medium and smaller sized fruit juice companies have existing glass filling lines. Many of these lines are not fully utilized any more.

To convert an existing glass filling line into a PET hot fill line only a low investment is needed. Therefore PET hot fill offers small and medium sized fruit juice companies an attractive opportunity to implement PET packaging.

Comparing cold aseptic and PET hotfill, it is obvious that in particular PET panelless hotfill will be a more economic solution below 50 million fillings per year.

The given paper will highlight these aspects in detail.



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SPEAKER PROFILE

Rüdiger Löhl, born on 14.09.1955 in Burbach / Siegerland

College education

1974 – 1978: Engineering College Darmstadt; Plastic Technology; Diploma: Dipl. Ing (FH) of Plastic Processing

1978 - 1979: German army, Industrial experience

1979–1988: Plastic Service GmbH / Mannheim / Germany, Manufacturer of auxiliary equipment for plastic processing.

Product Manager for hot runner systems.

1988–1995: Battenfeld Spritzgießtechnik, Manufacturer of injection moulding machines and industrial robotic systems. Employment in various positions:

Till 1990 employment as national sales manager

Responsible for the sales of injection moulding machines and industrial robotic systems on the German and Austrian market.

Till 1993 as Marketing Manager and additionally responsible for „System Sales“, in USA and Canada for Battenfeld of America Inc. / Warwick, Rhode Island / USA

Till 1995 as sales representative in Germany

1995–1997: Strack Norma GmbH / Wuppertal / Germany, Manufacturer of mould bases and accessories for moulds and dies; Sales Director

1997-2000: Dr. Boy GmbH / Neustadt (Wied) / Germany, Manufacturer of injection moulding machines; Managing Director

2001-2002: SIG PETtec GmbH & Co. KG / Troisdorf / Germany, Manufacturer of single stage injection-stretch-blow moulding machines for the production of PET bottles; Managing Director

From 2003 till today: E-proPLAST GmbH / Schmalkalden / Germany, Manufacturer of PET bottles and containers and technical injection moulding parts; Managing Director