



8l container dispenser in 100% rPET

From the source to the table

The term “Volvic” derives from the Latin expression “Volcani Vicus” (land of volcanoes) and refers to the Regional National Park of the Volcanoes of the Auvergne natural park in France. This is the source of the natural mineral water Volvic. The water began to be sold in 1938 and in 1955 took the name of Société des Eaux de Volvic. In 1969, the classic glass bottle was replaced by a container in PVC, one of the first examples of plastic bottles to be used in Europe to bottle spring water. In 1997, Volvic became the first food and beverage company to launch recyclable PET bottles on the market. From a recently realised new development results an 8l container of 100 per cent rPET.

The whole bottling process of the Société des Eaux de Volvic, part of the Danone group, undergoes careful controls. This starts from protecting the source to monitoring the natural environment until the moment when the bottled product is consumed. All of this is taken care of in minute detail, involving partners and suppliers, as with the recent investment in the purchase of a new bottling line for 8l containers in 100% rPET. Italian company SMI supplied the integrated Ecobloc Ergon system. The synergy between Volvic-Danone and SMI started from the design phase, every choice rotated around the necessity to obtain higher than average bottle performance and quality, safeguarding the final product, whilst ensuring eco-sustainability and operational efficiency of the whole production process.

The bottling process starts with conducting the water through stainless steel pipes from the source to the bottling plant. To protect the liquid from any external contamination the Volvic bottling plant was designed according to advanced automation and security criteria. The bottles blown, filled and capped by the integrated Ecobloc Ergon system need to go through a long series of controls within the bottling line and every day the Volvic Quality laboratory collects samples and carries out careful tests.

8l home use, container-dispenser

So that the natural mineral water arrives at the consumers' table as pure as when it flows from the source, the container plays a vital role. Volvic's high regard for environmental issues led the French company to develop modern solutions for the recycling of PET. Volvic states that it was one of the first companies to use rPET to produce containers, slowly increasing the percentage until it hit 100% with the new 8l bottle. This container features a square base, in the same style as the smaller Volvic bottles, to create a practical home use container-dispenser. Its shape, part of which is slightly tilted, ensures that the bottle can be easily positioned on a flat surface. Thanks to the special cap which is used as a tap the supply of the product is claimed to be convenient and easy. The new design of the maxi container was accurately reproduced by SMI which created the moulds that are installed on the integrated system, the Ecobloc Ergon HC EV. This system has been chosen to produce, fill and cap large size containers. The new investment was studied in detail, creating strong teamwork between the experts at Volvic and Danone and the designers at SMI. The complete production process was designed so that every step of the bottling is kept under constant control, because it is here that the water comes into contact



Recognisable by the green cap, Volvic 0.5l and 1.5l bottles were the first in France to be produced with a type of plant-based plastic that is 20% vegetable origin, favouring the use of renewable materials.

with the external environment and is at a greater risk of contamination which would compromise the sensory, chemical, physical and microbiological properties. SMI provided the French technicians with one of their own stretch-blowers, so that they could carry out a series of blowing tests while accurately testing the preforms and bottles. These tests allowed them to regulate the “top load” resistance and the material distribution, a step at a time, developing a specially made preform with a specific shape. The biggest challenge, when using preforms made from recycled material is to guarantee the constant resistance of the bottle when it is being blown.



Stretch blow moulding, filling & capping

The Ecobloc Ergon HC EV is a system for stretch-blowing, filling and capping the square based 8l containers in PET with a production capacity of up to 3,200bph. SMI points out that the system does not need a rinser, nor conveyors between the blower and the filler or accumulation. Other advantages include:

- Isolating system between the "dry" area of the blower and the "wet" one of the filler, through a jet of high pressured, sterile air in excess of 5Pa. The air flow, through 4 units of Galvani filters (HEPA filters) is situated on the top part of the filler area to avoid contamination, acting as a "clean room". In addition, the filling valve is controlled by an electronic flowmeter.
- The preform suction system is situated on the oven infeed star, to

remove any impurities that could be on the inside of the preform itself. The air that is inserted into the suction system is filtered and is part of the air recovery system that comes as standard on all the range of SMI stretch-blow moulders. The system combines blowing air into the preforms with the following vacuum suction process.

- The machine features integrated inspection systems with cameras to guarantee the quality of the bottled water, to monitor the production process and to avoid particles and/or impurities being deposited on the inside of the unblown preforms.
- Maintained sterility for all the processes of blowing, filling and capping.
- The stretch-blow module is equipped with a double stage air recovery system, which allows the reduction of energy costs tied to the production of high pressure compressed air.
- The filler area is compatible with

COP (Cleaning Out of Place) and equipped with optional system of stainless steel bulkheads to separate the "wet" area of the filler with the "dry" area of the blower during maintenance or cleaning operations.

- Electronic components are positioned on the inside of the panels to ensure a greater protection from damp.
- The base of the filler area is made in stainless steel and slightly sloped to ensure that any spilt liquids go down the drains.
- The electronic capper is equipped with cap orienting during application, a system which controls correct positioning of the cap and a rejection system for over turned caps; cap sterilisation through jets of ionised air on the cap channel
- Washable cap accumulation table, in stainless steel, equipped with an optional system to suction the caps to remove any impurities that might have deposited on them while moving along the hopper

The increase in production speed of bottling lines, the use of lighter containers, and the change in laws that are stricter in terms of food product quality and integrity force companies in this sector to use cutting edge technology equipped with advanced inspection systems for preforms, bottles and caps. To satisfy the quality standards of the Danone group, the Ecobloc HC Ergon is equipped with Pressco inspection systems.

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