Coca-Cola HBC Romania

Factsheet of the in-house rPET production facility

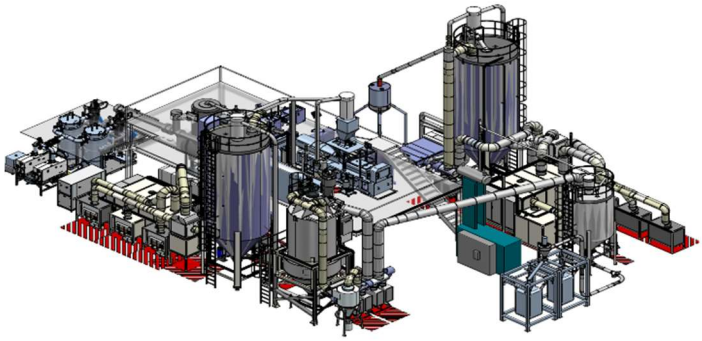
Coca-Cola HBC plant in Ploiești, Romania

PLOIEȘTI – mega plant, regional production hub and second largest in the Coca-Cola HBC Group, opened in 1995. The Ploiești plant is a model of automation and digitalization and 10% of the total volumes produced here is exported to another 15 countries all over Europe. A unique trait of our business model in Romania is that we produce in Ploiești all our plastic preforms, for the entire portfolio, supplying them to the other 2 plants (Timisoara and Poiana Negri) also.

Ploiești plant is a model of pioneering innovative, environmental-friendly cutting-edge technologies, contributing to Coca-Cola HBC's long-term sustainability strategy. Following a green investment of approximately RON 55 million, the Ploiești plant now benefits of an innovative decontamination technology, that allows Coca-Cola HBC to obtain food grade rPET preforms in-house, making us the first beverage producer in Romania with such unique technology.

This investment opens up the opportunity to have 100% of our portfolio bottled in rPET produced in-house.

IN-HOUSE rPET PLANT STRUCTURE



TOTAL AREA: **2,400** sq. m. organized in:

- PRODUCTION AREA: 1,200 sq. m.
- STORAGE AREA: 1,200 sq. m.

The production area is divided into 3 distinct sub-areas:

AREA 1 This is the area where the Hot Washed Flakes (HWF) arrive in the form of flakes of recycled PET not yet ready for food contact. In this area, the bags of HWF are unloaded and, by an overhead crane, are discharged and stored inside silos.
The flakes are stored in 2 silos that have a capacity of about 50 cubic meters each.

AREA 2 In this area, the plastic is made suitable for food contact.
First, the raw material goes through a sorting process based on laser spectroscopy to remove any additional materials such as metal, wood etc. Next, the raw material goes through a drying process

in two consecutive steps: crystallizing and drying. Additionally, it goes through a metal detector to remove all metal foreign bodies.
Ultimately, a decontamination reactor melts the flakes and removes all potentially present pollutants through a filtration and vacuum process.
Next, an extruder turns the plastic into long strands that are cut into small fragments (pellets of resin) and sent to 1 storage silos of 27 tones.

The innovative decontamination technology, based on Liquid State Polycondensation, used in Ploiești plant is approved by European Food Safety Authority (EFSA) according to EU Regulation 2022/1616 on recycled plastic materials and articles intended to come into contact with food products.

AREA 3 We move than the rPET resin **into preform production area.**

There are 6 injection presses in the area:
• 250-ton press with 60 cavities
• 1400 ton presses with 72 cavities
• 450-ton presses with 96 cavities

The 6 presses, through special molds, produce 11 types of preforms and cover all the needs of Coca-Cola HBC Romania

rPET BOTTLES PRODUCTION

• 1 flake decontamination reactor
• 6 preform injection presses

As of August 2023, production is on a 24/7 continuous cycle. When fully operational, the plant has a maximum production potential of 20,000 tons/year of rPET.

ENVIRONMENTAL IMPACT

Bottling the entire portfolio in 100% rPET will contribute to a significant drop in carbon emissions. The rPET flakes have an 80% lower carbon footprint than the virgin PET resin and the rPET production facility is 100% powered by electricity from renewable sources, so no emissions generated by this unit.

TESTING PROCEDURE

During a production cycle we carry out more than **10,000 quality checks per day** to ensure our packaging meets highest standards of food safety.
Checks performed from raw material (hot washed flakes) to final product for each production step (resin, preforms, rPET bottles, finished goods). The most relevant analysis such as incoming raw material, Intrinsec viscosity, Acetaldehyde and Benzene Content using Gas Chromatograph analyzer, Moisture and granulation, measurements of PET dimensions are realized in order to ensure a very stable process related the quality of rPET.

Device used to verify the PET

Chromatograph analyzer

Contaminants from HWF - materials rejected during sorting process based on laser spectroscopy

FORMATS PRODUCED

The plant can produce 11 types of preforms, both for sparkling & still drinks, and water in the following formats and weights ranging from 12.75g to 46.7g:

- 330ml Cappy Pulpy
- 400ml Cappy Lemonade flavors
- 500ml Still Water
- 500ml Sparkling Water
- 500ml carbonated soft drinks
- 500ml Fuzetea, in both clear & green colors
- 1l Schweppes with different flavors
- 1.25l carbonated soft drinks
- 1.5l Cappy Pulpy & Fuzetea, in both clear & green colors
- 1.5l Schweppes
- 2l Still and Sparkling Water in blue color
- 2l carbonated soft drinks
- 2.5l carbonated soft drinks

From left to right:
Fuzetea 500 ml; carbonated soft-drinks 500 ml; water 500ml; Cappy & Cappy Lemonade 330 & 400 ml; Cappy & Fuzetea 1.5l; water 2l; Schweppes 1.5l; carbonated soft-drinks 2l; carbonated soft-drinks 2.5l

EMPLOYEES

For the specific rPET decontamination unit we employed 19 people: 5 Operators for the line, 4 Crane Operators, 4 Forklift Operators; 4 quality technicians, 1 Indirect Production Specialist, 1 Production Manager.

INVESTMENT

The green investment of RON 55 million is one of a kind for a beverage producer in Romania and is split as follows:

- RON 35 million in machinery, such as resin production machines, presses and molds, IT systems.
- RON 20 million on infrastructure (mainly building works, electrical part and fire-fighting system)

GLOSSARY

PET: the polyethylene terephthalate, better known as PET, is a thermoplastic resin widely used in the food, mechanical, electrical, and chemical industries. PET products are particularly used in the food industry to hold liquids or solid foods because its characteristics make it suitable for food contact. PET plastic is a 100% recyclable material many times over, and it does not lose its basic properties during the recovery process. By properly recycling a PET bottle, in fact, it can become a bottle again, reducing the need to produce additional plastic material.

rPET: recycled PET – PET that went through a recycling process.

recyclable PET – PET that has the property to undergo a recycling process.

Hot washed flakes: recycled PET flakes, not yet suitable for food contact, are the raw material needed to produce rPET bottles.

Resin grains: small pieces of PET/rPET that have been made suitable for food contact through decontamination process. They are made into preforms by the injection press.

Preform: Preform is the PET bottle (virgin or recycled) before blow molding that gives it the shape by which it is commonly known. Recycled PET preforms, compared to virgin PET preforms, are darker and opaquer.

Overhead crane: type of crane (also called "bridge crane") that combines three straight movements along three perpendicular axes: it consists of a hoisting organ installed on a trolley sliding along one or more rails made in a structure (bridge) that can slide on rails in a direction perpendicular to the motion of the trolley.

Extruder: an instrument that performs extrusion, that is the transformation of plastic by heating to obtain the correct technical characteristics of the material, which is then injected into the appropriate molds to shape preforms.

Injection press: machinery that enables injection molding, which is the industrial production process in which a plastic material is melted (plasticized) and injected at high pressure inside a closed mold, which is opened after the product solidifies.

Decontamination reactor: is the machinery that makes recycled PET suitable for food contact again. By controlling critical process parameters such as temperature, contact time and vacuum effect, the plastic is decontaminated of contaminants such as volatile compounds.

Silos: constructions like cylindrical or prismatic towers designed for the storage of materials, mostly located in ports, railway junctions, places of production or processing plants.