



GEA ECOSPIN 2

Aseptic filling bloc for high speed lines.

ECOSPIN2: LONG TERM PROTECTION.

A robust, proven and reliable aseptic technology.

The 6th generation of PAA sterilization technology

With ECOSpin2, GEA reaches the 6th generation of PAA sterilization technology. It focuses on the saving of space, water and energy which, makes GEA technology the best choice from operational and investment point of view.

The system consists of bottles and caps sterilizer and rinsers, filler and capper enclosed within a class 100 microbiological isolator which provides a physical barrier between the external environment and the microbiological controlled area.

The overpressure inside the microbiological isolator is created by independent energy-saving active filtration stations equipped with redundant final HEPA filters.

All relevant internal components can be easily reached through intervention gloves which avoids the operators having any contact with the sterile zone. This keeps the operators safe and avoids any risk to the aseptic environment. Format changeover can be performed, with no loss of sterility, using manipulation gloves.

GEA ECOSpin2 technology uses only one sterilizing solution, based on Peracetic acid, to sterilize the environment and the packaging materials. The PAA solution is recovered and, once concentration and temperature are restored, reused in a closed loop.

ECOSpin2 is equipped with all the necessary process units to produce sterile water, Peracetic acid solution, the cleaning agent and the sterile filtration of all the fluids.

1st generation: 1993

Rotary aseptic high speed line with clean room



2nd generation: 1996

Unibloc



3rd generation: 2001

Unibloc 2



4th generation: 2005

Unibloc Spin



ECOSpin2 Zero

ECOSpin2 Zero means zero peroxides emissions: liquid PAA solution exceeded is neutralized inside an external tank before drainage phases (end/during production). Furthermore, PAA and all chemicals fumes are neutralized before releasing into the environment. This results in the lowest PAA and water consumption.

Production capacity

ECOSpin2 has a speed of up to 72,000 bottles per hour on 500 ml bottle.

5th generation: 2009

ECOSpin

**6th generation: 2012**

ECOSpin2

**2015**

ECOSpin2 Zero



Up to 210 hours
for HA operations



Up to 210 hours
for LA operations

No intermediate SOP
during production



GEA ECOSpin 2 important features

- Format change over in 30 minutes with no loss of sterility
- Sterilization of bottles performed at temperatures under PET shrinkage limits (65°C)
- Residuals below 0.25 ppm as per FDA regulation
- FDA approved technology

GEA PERACETIC ACID (PAA) STERILIZATION TECHNOLOGY.

Represents the state of the art for aseptic filling systems.



Bottle sterilization is performed with high pressure PAA solution spray

Bottle sterilization

External bottle sterilization treatment is a GEA distinctive feature. It is designed to be effective on every bottle shape to avoid microbiological carry-over into the filling area. This ensures GEA's lines continuously operate under aseptic conditions, with no intermediate environmental sterilization cycles, maximizing the production time.

A full cone or blade penetrating nozzle is used for internal bottle sterilization treatment. This nozzle generates a high pressure PAA solution spray that is able to decontaminate the "Cold Spot" in inoculated bottles.

- The high-efficiency spraying system keeps treatment time very short.
- The efficiency of each nozzle is automatically checked by a Smart Sensor that ensures proper sterilization of each bottle.

The internal bottle sterilization treatment guarantees over 6 log reduction.

Moreover ECOSpin2 has a new no valve sterilizer design that makes the machine simpler. No valve design means even no

electrical parts allowing easier machine maintenance and less wear and tear.

GEA external sterilization is applied to the bottle surface, with dedicated manifolds, to treat:

- Bottle external neck
- Bottle external body
- Bottle external bottom

GEA external bottle sterilization can reach over 5 log reductions.



A special attention to quality

GEA aseptic technology is designed to respect the natural features of each product.

ROBUST STERILIZATION TECHNOLOGY.

No compromises for sensitive products.

Bottle sterilization and rinsing

After sterilization the bottle is rinsed with sterile water. GEA sterilizer is based on a full-cone, non-penetrating nozzle that maximizes rinsing efficacy. This nozzle has a pulsed spraying mode for minimum water consumption. Rinser has really easy construction with a minimized need of maintenance.

Caps sterilization and rinsing

Sterilcap IM is able to sterilize one-piece caps by immersion into a PAA solution. The rinsing is performed by sterile water spray.

The mechanical design has been focused on a jam-free spiral channel where the caps are driven by a PAA solution flow.



Detail of the bottle rinser



Detail of the Sterilcap IM

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