Closure Sterilization Technologies

Peracetic Acid or Hydrogen Peroxide based sterilization technologies for caps and foil

GEA offers both Peracetic Acid (PAA) and Hydrogen Peroxide (VHP)-based sterilization technologies for any kind of closures, specifically designed to perfectly combine a highly effective sterilization treatment with the low consumption of utilities.

**Flexibility**
GEA provides a range of closure sterilization machines to meet all customers’ needs. This includes Sterilcap units for both sport and flat plastic caps, and Sterilfoil units for aluminum foil.

Both Sterilcap and Sterilfoil can be combined with all GEA aseptic or ESL filling systems for both High Acid and Low Acid beverages in PET or HDPE bottles.

GEA closure sterilization machines are able to achieve up to 6Log reduction on *B. atrophaeus*, meeting the highest required level of decontamination.

**Advantages**
Both PAA- or VHP-based sterilization technologies ensure an effective and gentle closure treatment that avoids any deformation or the removal of the slipping agent.

GEA closure sterilization technology allows a quick changeover from flat to sport cap without any mechanical intervention and without losing sterility.
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PAA technology

- Sterilcap IM sterilizes one-piece caps by immersing them in a basin of PAA solution with spiral routing. Caps are then rinsed with a spray of sterile water. Sterilcap IM is usually matched with the GEA PAA-based, high speed, aseptic filling blocks. The Sterilcap IM achieves the same microbiological sterilization target that’s specified for the bottles on both internal and external closure surfaces.
- Sterilcap L sterilizes internal and external surfaces of both flat and sport caps with PAA spray and is suitable for low-speed lines.

VHP technology

VHP technology relies on the dry sterilizing effect of H₂O₂ vapor at the correct concentration and temperature. Both sport and flat caps can be treated on the same machine.

- Sterilcap VHP R is the perfect cap sterilization system for Aseptic Blow Fill technology. It is designed to create a buffer of caps to guarantee the necessary redundancy required by the blow-fill technology: if there is a jam in the flow of caps, the aseptic blow filling bloc can be emptied with no loss of preforms or bottles.
- Sterilcap VHP L is specific for both ESL and aseptic High Acid applications and it can achieve a wide range of decontamination target levels. Its design allows the caps to be moved forwards using only the vapor flow and gravity.
- Sterilfoil VHP L, specifically for aluminum foil treatment, is suitable for both ESL and aseptic High Acid / Low Acid applications and it can achieve a wide range of decontamination target levels. The Sterilfoil VHP L sterilization chute is electrically heated on both sides to prevent H₂O₂ condensation, avoid foil jams and prevent damage that would later result in poor foil application performance.

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