Tetra Alsafe®

Aseptic tank

This fully automated aseptic tank is available as a separate unit or as a component in Tetra Pak UHT line solutions, with guaranteed performance.

Application

For intermediate storage of low-acid food products under aseptic conditions.

Working principle

The Tetra Alsafe tank is sterilised by steam at a minimum temperature of 125°C for a period of time. It is then cooled by water circulating through the cooling jacket. During cooling, sterile air is fed into the tank to prevent vacuum formation. During production, sterile air fills the tank space above the product level. The pressure is automatically controlled to maintain the feed pressure required by the filling machine in operation. As option, the Tetra Alsafe can be equipped with an agitator. This is recommended for products, that can separate in the tank during storage (e.g. chocolate milk and juice with fibres) and to even out the product temperature.

A valve cluster module with control panel directs product flow, sterile air, cleaning liquids and steam. During production a steam barrier (110°C) is applied to protect the product from contamination. After the filling machines, the end valve cluster prevents reinfection.

The tank is cleaned in place by a central CIP system. Since tank operation includes high-temperature sterilization followed by cooling, the tank is designed to be completely implosion-proof. The tank is manufactured in accordance with the European pressure vessel code (PED), but can be manufactured to comply with other codes on request.

One of the three stainless legs is equipped with a load cell which measures the content of the tank and shows the reading on the panel.

Tank operation is fully automated and production interlocks are included for safety reasons. The operator only has to initiate the process steps: tank sterilization, production and CIP.

The tank is operated from its own programmable control in the control panel.

Basic Module

Vertical tank with cylindrical cooling jacket and safety rail.

Manhole and manhole cover. Three legs, two with adjustable ball feet. Load cell in one of the legs.

Valve cluster module with frame-mounted pre-assembled valves, sterile air filters, safety device, air pressure equipment for emptying the tank, end valve cluster and control panel.

The control system is Allen-Bradley Logix or Siemens S7 and the human-machine interface (HMI) is a graphical touch-screen.

Connections for product, cooling water, air and CIP liquids.

Materials

Tank in AISI 304 stainless steel. Valves and pipes in AISI 316 stainless steel. Max. working pressure 300 kPa (3.0 bar).

Dimensions and shipping data

Tank size litres	Height mm	Diameter max. mm	Net weight kg	Gross weight kg
7 000	4 400	2 100	1 600	2 000
12 000	5 000	2 500	3 100	3 400
20 000	5 300	3 100	4 300	5 600
30 000	5 600	3 600	6 300	8 050
40 000	6 600	3 600	7 600	9 650
50 000	7 600	3 600	9 100	11 150

Optional equipment

- Inner container in acid-proof stainless steel AISI 316 for high-acid product
- Steam-reducing valve set
- Agitators with Huhnseal shaft seal including steam barrier mounted on top of the tank. For products with higher viscosity.
- Agitator, magnetically driven, welded into the bottom of the tank, without sealing or need for steam barrier
- Inlet from two or more UHT units
- Separate in- and outlet to tank for sedimentation-sensitive products and to achieve circulation and replacement of product stored in the tank
- Low fouling end-valve cluster
- Full aseptic line flexibility with automatic control and inter-mediate steam barrier. Full CIP is possible on any line independently of the other lines. Automatic selection / connection from different aseptic tanks or UHT lines to filling lines by aseptic valve clusters
- Air compressor with air cooler and air tank
- Control room soltution - the remote operator interface of Tetra PlantMaster ME (Machine Edition) is application software for remote handling of branded units. This interface includes the same functionality as the local HMI, but also the extra feature for data logging of process values and alarms. The software is built on the Tetra PalntMaster V5.0 library and its stated requirements. Tetra PlantMaster ME is prepared to handle several applications in the same PC, e.g. a UHT line containing one sterilizer connected to two Tetra Alsafe units. It is also possible to efficiently merge the software into the plant PC with Tetra PlantMaster V5.0
- Sterile water flush between production cycles
- Air cooler with compressor for control panel
- Stainless steel platform placed on the tank top for personal safety and easier maintenance
- Aluminium or stailess steel ladder with fall protection for personal safety
- Insulation dimple/jacket or half pipe on bottom, working pressure 3 bar/200°C
- Insulation dimple/jacket or half pipe on shell, working pressure 3 bar/220°C

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