Tetra Pak

TA VTIS – Introducing direct heating by steam infusion
Tetra Pak – Direct heating

Tetra Pak offer our customers the technology best suited to achieve the desired product quality at the lowest possible cost.

Tetra Pak have a complete portfolio giving the customers a choice of system.
For UHT & ESL milk there is no significant difference in product quality between infusion and injection technology. For whipping cream a better stability can be achieved with infusion technology. Tetra Pak recommendations are based on research and studies done with 100% comparable conditions.
The Tetra Pak portfolio of UHT systems

Indirect systems
- *Plate heat exchangers*
- *Tubular heat exchangers*
- *Scraped surface heat exchangers*

Direct systems
- *Steam injection with subsequent flashing*
- *Steam infusion with subsequent flashing*
Direct UHT-treatment

Tetra Therm Aseptic VTIS
- A high performance UHT module with focus on superior quality.

Tetra Therm Aseptic VTIS with option for steam infusion
- A version to achieve a specific product quality or meet specific customer demands.
Tetra Therm® Aseptic VTIS
with steam infusion option

Aseptic processing module for direct UHT treatment suitable for high quality products such as

- Milk
- Enriched milk
- Whipping cream
- Formulated dairy products
- Soy milk
- Ice cream mix
- Dairy desserts
- ESL
Tetra Therm® Aseptic VTIS 100
Based on PHE with steam infusion option

Standard temperature programme for Milk
Tetra Therm® Aseptic VTIS 100
Based on THE with steam infusion option

Standard temperature programme for Milk
Tetra Therm® Aseptic VTIS
with steam infusion

Steam infusion module
Tetra Therm® Aseptic VTIS
with steam infusion

Rapid heating with steam infusion vessel

- Rapid heating with minimal impact on taste and colour
Tetra Therm® Aseptic VTIS
with steam infusion

Patent: "Air insulation"

- The distribution plate at the product inlet is protected by an air layer working as insulation.
Tetra Therm® Aseptic VTIS

with steam infusion

Patent: Steam distribution

• The patented steam distribution is vital for the reduction of fouling in the infusion vessel and a key to long running times

Flow distribution at the inlet to the main chamber for Infusor 25
Tetra Therm® Aseptic VTIS
with steam infusion

Patent:
Variable holding time

- A variable holding time is achieved by using the gap between the outer wall of the infusion vessel and a "cone" inside the vessel. The product level in the gap can be adjusted and a variable holding time is achieved.
A 1:2 adjustment of the holding time is possible during production.
Tetra Therm® Aseptic VTIS
with steam infusion

The complete system

The steam infusion vessel is a key component in the system, however the TA VTIS include other unique components such as the steam injector, heat exchanger, homogeniser and flash vessel as well as the modular concept and automation level offering an array of advantages.
Tetra Therm® Aseptic VTIS
Injection and infusion

Rapid heating with ring nozzle steam injector

- Instant heating with minimal impact on taste and colour

The TA VTIS infusion option is equipped with both steam injection and steam infusion giving the possibility to achieve the best product quality combined with the best production economy.
Tetra Therm® Aseptic VTIS

Flash cooling

Rapid cooling under vacuum with built-in condenser

- Fast CIP and pre-sterilisation
- Better taste with no off-flavours
- Less risk of fouling
- Prevents oxidisation
- Higher homogenization efficiency
- Less floor space
Tetra Plex®
Plate Heat Exchangers

Dedicated for pasteurisation and UHT-treatment of dairy, beverage, viscous and other liquid food products

- Patented flow distribution area
  - Uniform flow
  - No stagnant areas
- High thermal efficiency
- Glue free Clip-on gasket
  - No need for tools
  - Re-gasketing with plates in frame
Tetra Spiraflo® MT
Mono- and multitube heat exchangers

The all-round tubular heat exchanger specially developed for free-flowing, viscous products

- Floating shell and tube insert
- Superior flexibility for extension and modification.
- Easy maintenance and inspection
Tetra Pak offers a wide range of homogenizers with focus on high profitability and first-class product quality.

- Low energy cost
- Low noise level
- Low water consumption
- Efficient pressure control
Tetra Therm® Aseptic VTIS – The modular design
Tetra Therm® Aseptic VTIS
Automation

- All Tetra Pak UHT modules are equipped with Allen-Bradley and TPOP automation solutions to guarantee quick programming and easy to understand.

- All programmes are well defined and tested to safeguard the production and to achieve the defined product quality. Tetra Alview is the control room solution for data logging and remote control.
Tetra Therm® Aseptic VTIS

Technical data for TA VTIS with Infusion

Approx consumption data for PHE and THE based module 2 000 – 26 000 l/h and per 1000 l of product and standard temperature program

- **Steam, 6 bar**: 145-150 kg/h
- **Cooling water, 3 bar 20°C**: 1 800 l/h during production 1 100 l/h during pre-sterilisation and cooling
- **Rinsing water, 3 bar**: 1 000 – 1 500 l/h during CIP rinsing, depending on type of heat exchanger
- **Instrument air**: 50 Nl/m, total not depending of capacity
- **Electricity 380/400 V, AC50 Hz**: 26 – 33 kW, excluding homogenizer
Tetra Therm® Aseptic VTIS
with steam infusion option

Customer value

✓ Superior product quality
✓ Suitable for a wide range of products
✓ Long production runs
✓ Superior product quality in the most economical way
✓ High and consistent product quality
✓ Production flexibility
✓ Easy operation

Technical feature

➢ The direct heating technology
➢ Combination of steam injection or steam infusion in one system
➢ Variable holding cell
Tetra Therm® Aseptic VTIS
with steam infusion option

Customer value
✓ Fast sterilisation and CIP
✓ Low product losses
✓ Short installation time
✓ Possibility for relocation
✓ Upgrade possibility

Technical feature
➢ Built-in condenser
➢ Small hold-up volume
➢ The modular concept