

Krones filling systems for milk

Hygienic and safe filling



 **KRONES**

Krones filling systems for milk



When it comes to filling, milk is one of the most sensitive products around – and therefore requires gentle treatment in a hygienically perfect environment. Krones meets precisely these requirements in its filling systems and customises them to exactly correspond to your treatment processes and shelf-life requirements.

At a glance

- Filling systems for PET, HDPE and glass containers
- For all treatment procedures: for the processing of both fresh milk and ESL or UHT milk
- Available as an individual machine or integrated in a block with
 - a rinser, blow moulder or labeller
 - sterilisation units for the cap, preform or container
 - capper for all current cap variants
- Fulfils the highest hygienic standards: aseptic systems certified, e.g. in accordance with EHEDG, 3A or FDA guidelines



Various dairy products and their filling processes

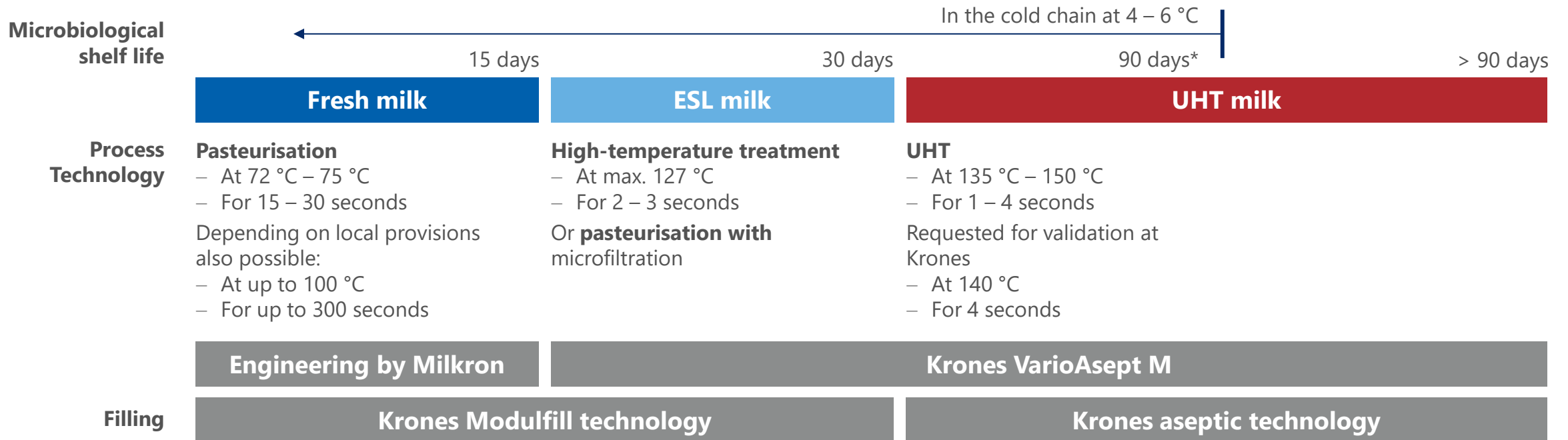


Product	Special feature	Shelf life	Filling method		
			Standard	UltraClean	Aseptics
Fresh milk	Pasteurised	8 – 15 days	x	x	
ESL milk	High-temperature treated	2 - 4 weeks		x	
	Pasteurised with microfiltration	2 - 4 weeks		x	
UHT milk	UHT	< 6 months			x



Filling of milk

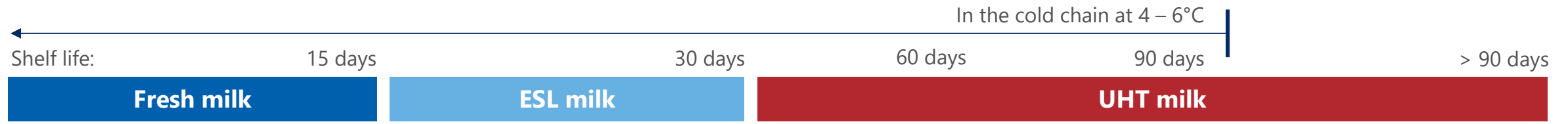
Various treatment processes



* In the cold chain with a shelf life of 30 – 90 days: Usual e.g. in the USA, but not in Europe

Krones filling systems

Portfolio for filling milk (low acid)



Modulfill VFJ/NWJ

- With clean room
 - Cleaning the outside with foam
- As individual machine for processing glass, HDPE, PET or in the Contiform Bloc for PET



For glass:*1*2

- Modulfill Bloc RF
- Hygienic line requirements

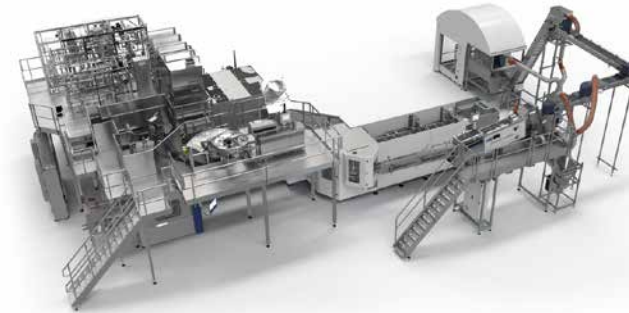
For HDPE:*1

- With HDPE neck trimmer

For PET*1

- Contipure Bloc CR

Krones aseptic systems



Aseptic preform sterilisation system

Contipure Bloc P

Contipure AseptBloc

Aseptic bottle sterilisation

PET-Asept D and L

*1 Shelf life depending on the respective requirements of the customer with regard to packaging material and ambient conditions

*2 max. 21 days

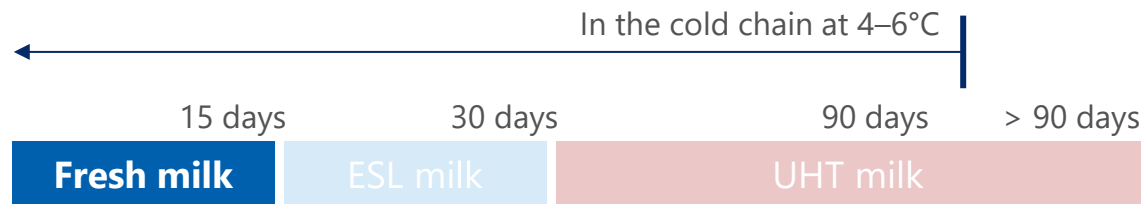
Filling of fresh milk

Modulfill VFJ or NWJ



At a glance

- Handles glass, HDPE and PET containers
- Available as
 - an individual machine or in a block arrangement with a rinser or labeller
 - part of the Contiform block, in a block arrangement with a blow moulder (only for PET containers)
- Output: up to 78,000 bottles per hour
- Recommended for filling milk in the cold chain with a shelf life of up to 15 days



Filling of fresh milk

Modulfill VFJ/NWJ



The filler

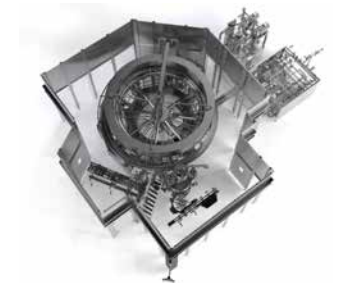
- Guarantees high microbiological safety through contactless filling
 - VFJ: with volumetric flow meter
 - NWJ: with load cell
- Also processes particles with a size of up to 3 x 3 x 3 millimetres
- Designed in accordance with clean room class ISO 7

Cleaning

- Manual or automatically positioned CIP cups
- With system for foam cleaning (in the filler)
- Available with Monotec starwheel columns or table top: fewer surfaces to clean

Cap treatment

- Treatment of PET caps: UV light or pulsating UV light
- Sterilisation of PET caps: H₂O₂
- Cap flushing: O₃ or ClO₂ water
- Dust removal with ionised air and extraction



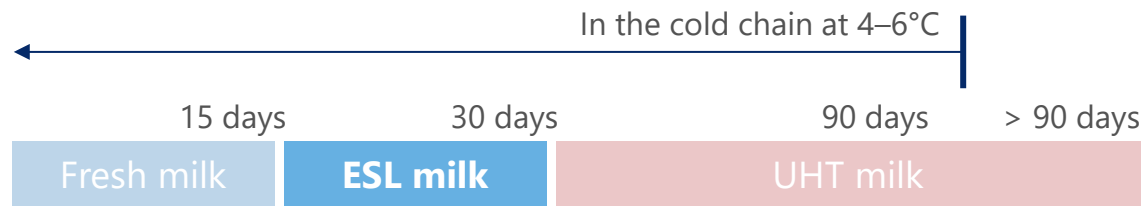
Filling of ESL milk in glass containers

Modulfill Bloc RF



At a glance

- Block including the Modulfill with rinser Moduljet in the clean room (RF: Rinsing, Filling)
- Output: up to 40,000 bottles per hour
- Recommended for filling milk in the cold chain with a shelf life of up between 7 and 21 days



Filling of ESL milk in glass containers

Modulfill Bloc RF



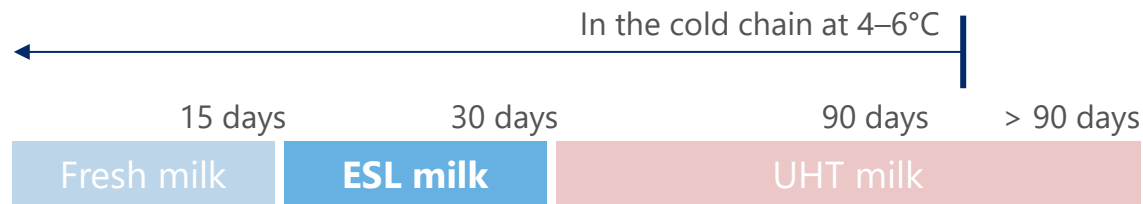
The rinser

- Electronic rinser with individually adjustable treatment times
- Available with up to three rinsing channels:
 - First rinsing stage: disinfectant such as ClO₂ water
 - Second rinsing stage: sterile water
 - Optional: third rinsing stage

The capper

When using twist-off caps:

- Treatment with pulsating UV light
- Under-lid steaming for additional hygiene



The filler

- Guarantees high microbiological safety through contactless filling
 - VFJ: with volumetric flow meter
 - NWJ: with load cell
- Also processes particles with a size of up to 3 x 3 x 3 millimetres

Cleaning

- Manual or automatically positioned CIP cups
- With a system for foam cleaning (entire block including machine guards)

The block

- Designed in accordance with clean room class 6
- Valve block for the entire machine block arrangement equipped with hygienic seat valves
- Further hygienic requirements for the filling line



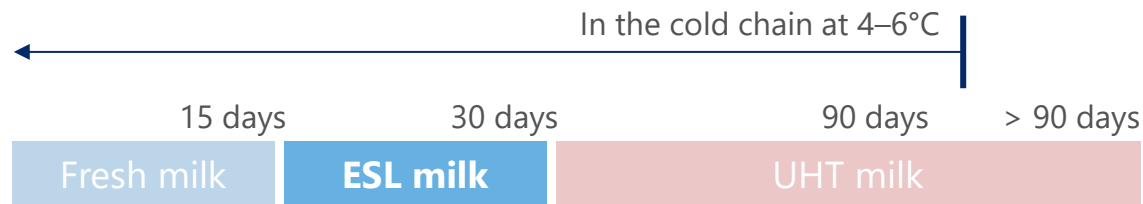
Filling of ESL milk in HDPE containers

Modulfill block with Kronos neck trimmer



At a glance

- Block comprising the Modulfill filler and neck trimmer from Kronos (in the clean room)
- Output: up to 28,000 containers per hour
- Recommended for filling milk in the cold chain with a shelf life of up between 7 and 30 days



Filling of ESL milk in HDPE containers

Modulfill block with Kroner neck trimmer

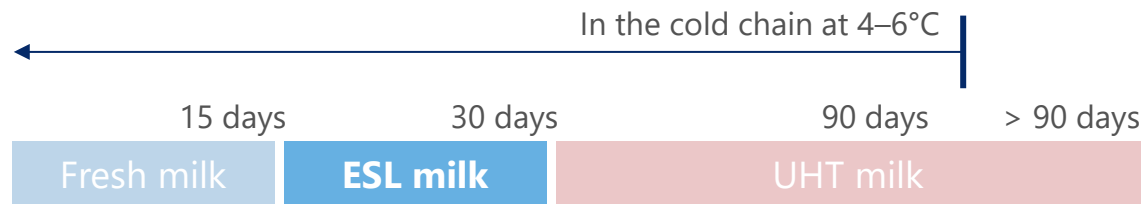


The neck trimmer

- Removes the dome on sealed HDPE containers
- Integrated at the machine infeed
- High microbiological safety as the containers remain closed after manufacture and are only opened shortly before filling

Cleaning

- Manual or automatically positioned CIP cups
- With a system for foam cleaning (entire block including machine guards)



The filler

- Guarantees high microbiological safety through contactless filling
 - VFJ: with volumetric flow meter
 - NWJ: with load cell
- Equipped with hygienic seat valves
- Also processes particles with a size of up to 3 x 3 x 3 millimetres

The block

- Designed in accordance with clean room class 6
- Valve block for the entire machine block arrangement equipped with hygienic seat valves

The capper

Cap sterilisation with the CapAsept D or pulsating UV light

The neck trimmer removes the dome on sealed HDPE containers



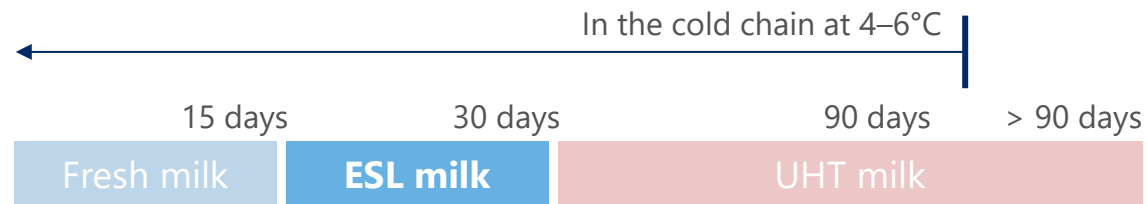
Filling of ESL milk in PET containers

Contipure Bloc CR



At a glance

- Blow moulder/filler block with Contipure preform sterilisation system and Modulfill filler
- Handles both standard and lightweight PET containers
- Output: Up to 48,000 containers per hour
- Recommended for filling milk in the cold chain with a shelf life of up between 7 and 30 days



Filling of ESL milk in PET containers

Contipure Bloc CR

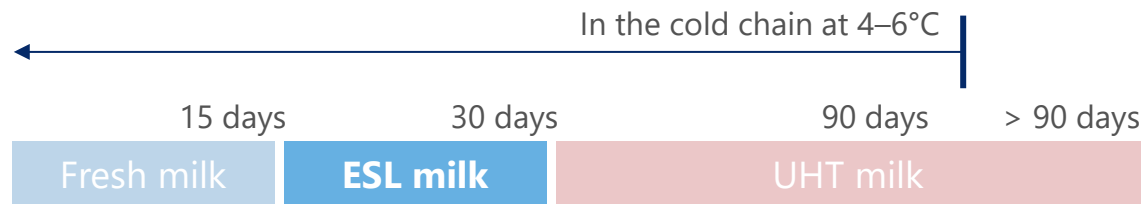


The preform sterilisation unit

Uses hydrogen peroxide (H₂O₂) for sterilisation

The filler

- Guarantees high microbiological safety through contactless filling
 - VFJ: with volumetric flow meter
 - NWJ: with load cell
- Also processes particles with a size of up to 3 x 3 x 3 millimetres



The block

- Designed in accordance with clean room class 6
- Valve block for the entire machine block arrangement equipped with hygienic seat valves

Cleaning

- Manual or automatically positioned CIP cups
- With a system for foam cleaning (filler and capper including machine guards)

The capper

Cap sterilisation with the CapAsept D

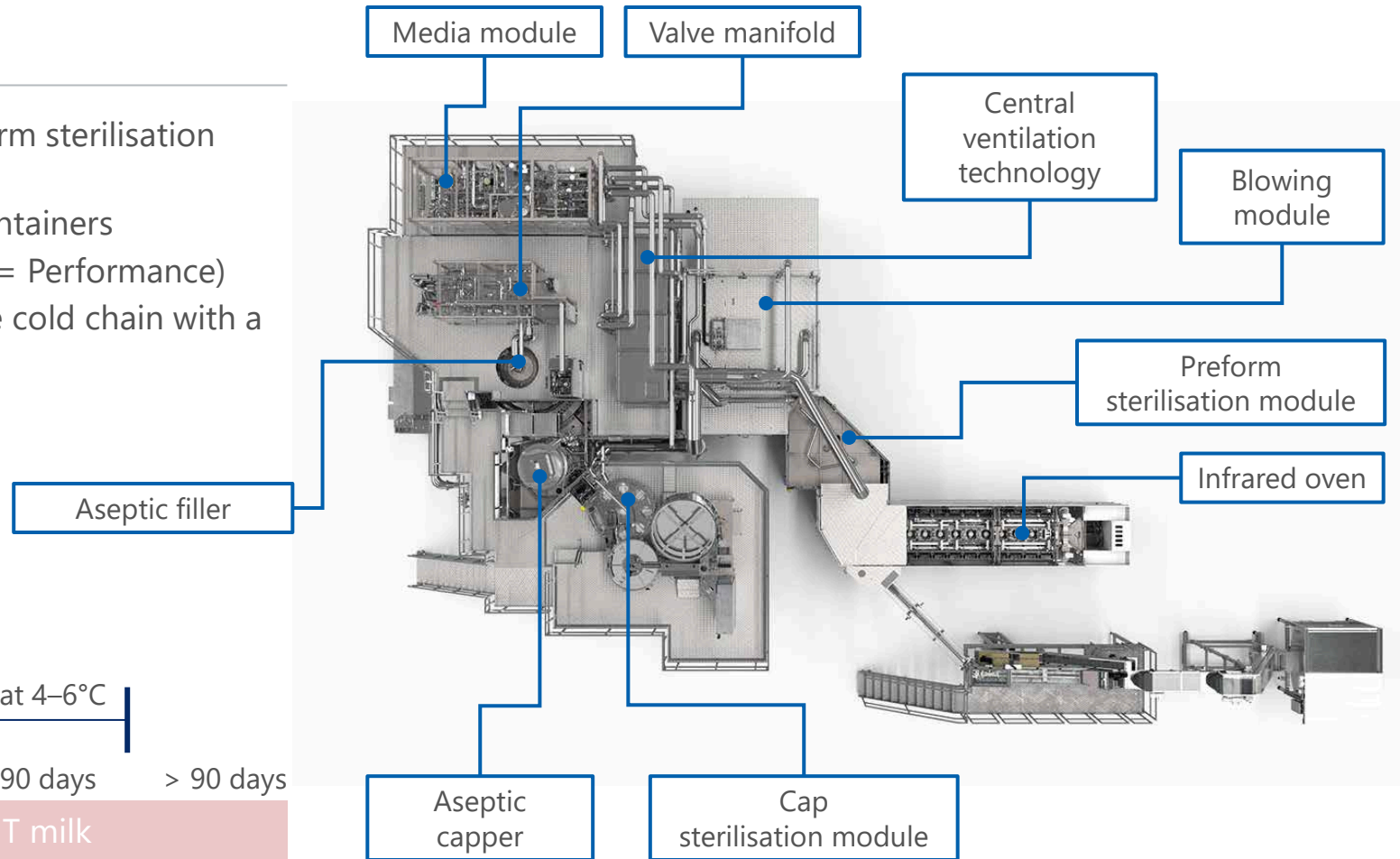
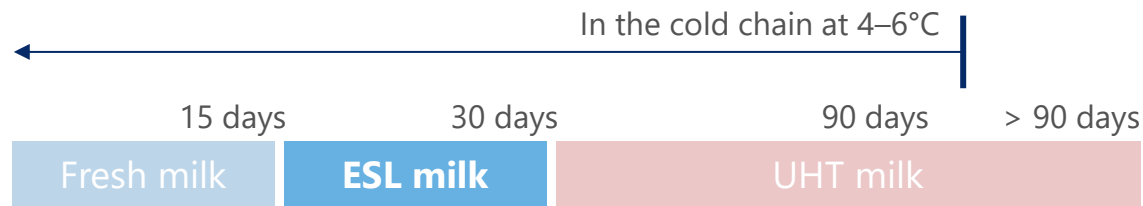
Filling of ESL milk in PET containers

Contipure Bloc P



At a glance

- Blow moulder/filler block with Contipure preform sterilisation system and aseptic filler
- Handles both standard and lightweight PET containers
- Output of up to 72,000 containers per hour (P = Performance)
- Microbiological guarantee for filling milk in the cold chain with a shelf life of up to 30 days



Filling of ESL milk in PET containers

Contipure Bloc P



The system

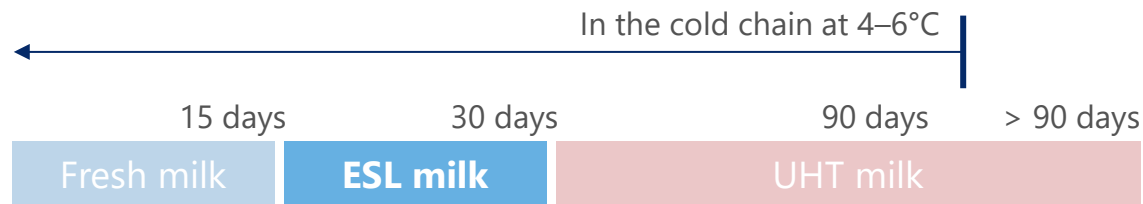
- Preform and cap sterilisation with gaseous H_2O_2 .
- Also processes particles with a size of up to 10 x 10 x 10 millimetres
- Microbiological validation for ESL milk 1:3,000
- EHEDG-certified

Cleaning and sterilisation

- Only requires 1.5 hours for cleaning and sterilisation (from the first to the last bottle)
- Sterilisation time of only 30 minutes after user intervention

Change-over

Automatic adjustment of the handling parts at speeds of up to 36,000 bottles per hour



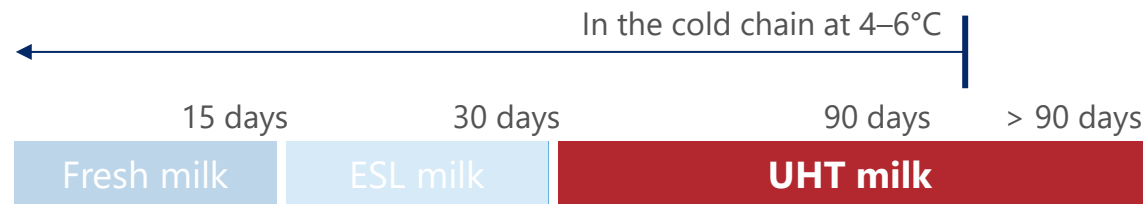
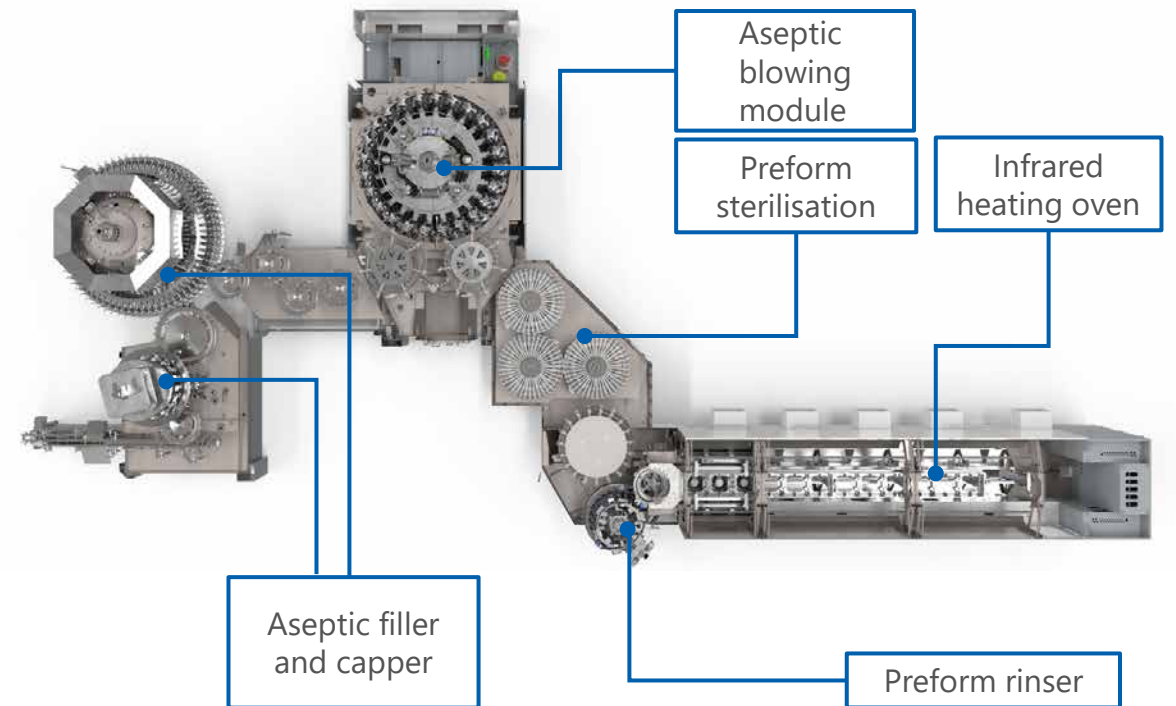
Filling of UHT milk in PET containers

Contipure AseptBloc



At a glance

- Aseptic blow moulder/filler block
 - Contipure preform sterilisation module
 - Aseptic blow moulder
 - Aseptic filler and capper
- Handles both standard and lightweight PET containers
- Output: Up to 72,000 containers per hour
- Recommended for filling UHT milk with a shelf life of more than 90 days



Filling of UHT milk in PET containers

Contipure AseptBloc

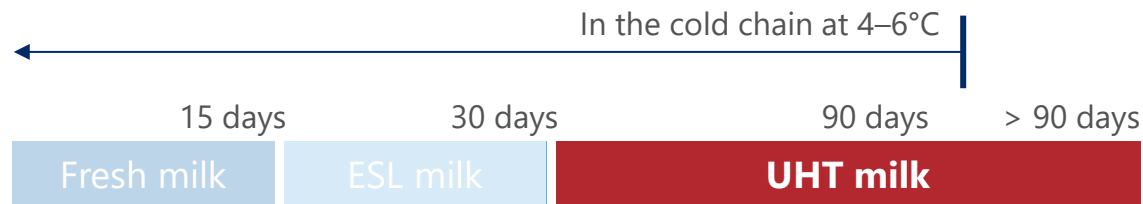


The system

- Preform and cap sterilisation with gaseous H_2O_2 .
- Fills products for storage at ambient temperature and in the cold chain
- Also processes particles with a size of up to 10 x 10 x 10 millimetres
- Microbiological validation for UHT milk 1:10,000
- Certified according to EHEDG, 3A, FDA guidelines

Change-over

Automatic adjustment of the handling parts at speeds of up to 36,000 bottles per hour



Cleaning and sterilisation

- Required time (from the first to the last bottle): 2.5 hours
- Sterilisation
 - Filler: Steam
 - Stretch blow moulder and isolator: gaseous H_2O_2
- Cleaning
 - Filler and capper CIP and COP systems



Filling of ESL milk and UHT milk in PET containers

PET-Asept D or L

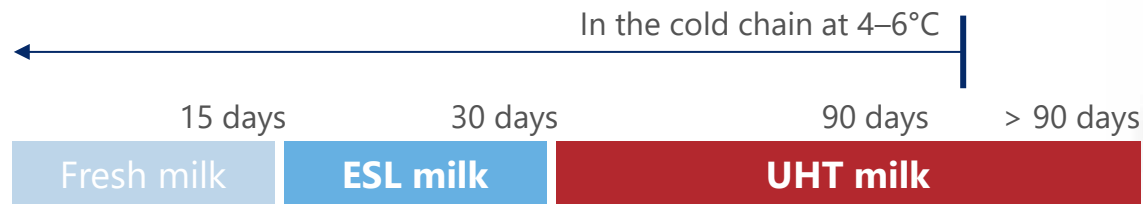


PET-Asept D

- Aseptic block with bottle sterilisation using H₂O₂
- Available in two output ranges
 - PET-Asept D: Up to 36,000 containers per hour
 - PET-Asept D Compact: Up to 12,000 containers per hour

Both systems

- For containers of all shapes with volumes of between 0.15 and 3.0 litres
- Also available in a block arrangement with a blow moulder
- For filling products for storage at ambient temperature and in the cold chain
- Also processes particles with a size of up to 10 x 10 x 10 millimetres
- Recommended for filling ESL and UHT



PET-Asept L

- Aseptic block with bottle sterilisation with peracetic acid
- Output: up to 65,000 bottles per hour



Krones capper systems



Particular focus on high hygiene standards in milk filling, both during the filling and capping process. The new generation of Krones cappers stand out from the rest thanks to their hygienic arrangement and their flexibility.

Module crown

- Capper for pressing on crowns
- Rinsable heads and bottle plates
- Agitator with extraction device, positioned on the clean room roof

Modulcap R

- Capper for applying aluminium rolling-on caps
- Entire capper can be flushed
- For pilfer-proof and Stelcap caps

Modulcap CM

- Screw capper for plastic caps
- Torque and press-on force of all capping heads are adjustable
- Flushable cap retainer

Modulcap CS

- Screw capper for plastic caps in aseptic design with single-head servo drives
- Permanent torque monitoring for even more precise screw-on values

Modulcap GS

- Variant of the aseptic servo-driven screw capper with gripper head
- For handling special caps, for example with tabs or recessed grips



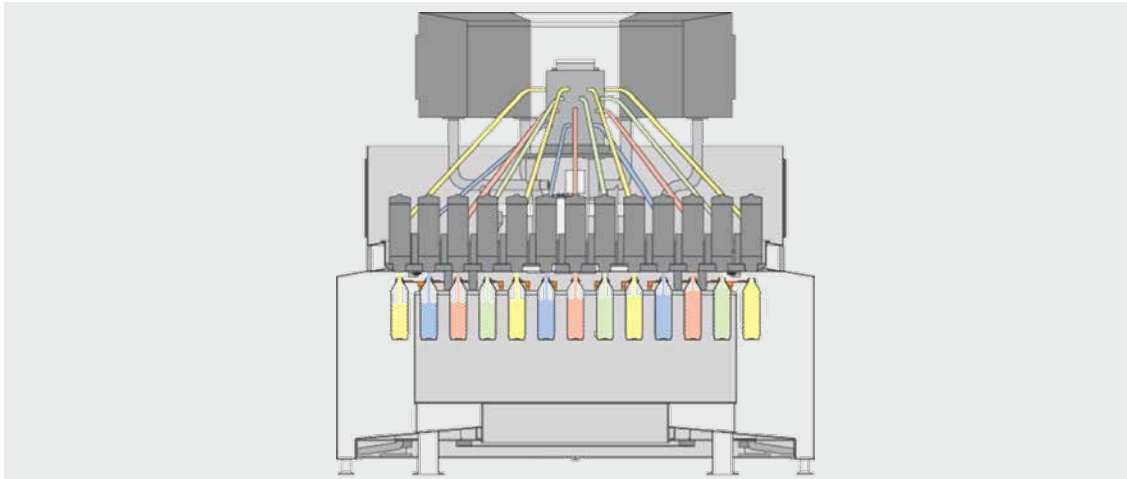
Innovative special solutions for filling milk



The demands of milk processing companies on their filling systems are high – with regard to both their quality and flexibility. In order to be able to handle a product range which is as wide as possible, Krones continually works on new and further developments of its existing filling systems.

Four-colour filling principle for aseptic systems

The approach makes it possible to process four different beverages on one system – and this under aseptic production conditions.



Modulfill with dual filling principle (“in-bottle standardisation”)

For processing two product lines (e. g. non-fat milk and milk with a normal fat content) in the same filling sequence. Both milk variants are dosed one after another through the same filling valve meaning that the fat content is adjusted directly in the container.



Everything from a single source



Training courses at the Krones Academy – trained personnel will increase your line efficiency

The multifaceted offer by the Krones Academy ranges from operation, servicing and maintenance courses through to management training. We will gladly also create your individual training programme.

KIC Krones cleaning agents make your machine shine

An immaculate production environment is essential if your product is to shine. KIC Krones provides you with the optimum cleaning agents and disinfectants for each individual production step.

KIC Krones lubricants – for each production step

Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

Krones Lifecycle Service – Partner for Performance

It goes without saying that also after the purchase of new machines, Krones takes care of your lines: The Krones LCS experts are always there to help you reaching your goals and turn your wishes into optimal LCS solutions.

High-quality components from Evoguard and Ampco

Are you looking for shut-off, separation or control valves? For hygienic or aseptic applications? Would you like to have pump technology that perfectly fits into your machines? You will find exactly what you are looking for at Evoguard and Ampco Pumps. The two Krones subsidiaries cover the entire spectrum of process technology components that you need for high-quality production.

**SOLUTIONS
BEYOND
TOMORROW**

