



Evotube PW

Heat exchanger systems for
efficient product heating



Heat exchanger systems: Heat even demanding products

The Evoguard systems gently heat your products still ensuring microbiological safety and, above all, with a high heat transfer performance.

- Are suitable for a wide variety of products with different flow characteristics (even for products containing particles/fibres)
 - All types of juices
 - Milk, milk shakes, plant based drinks
 - Beverages with particles/fibres (up to 15 x 15 x 15 mm)
- Reduce the thermal impact acting on the product due to low dwell times
- Are available as a complete system or individually designed to suit your line
- Development, engineering and production are carried out in-house in the Krones Group

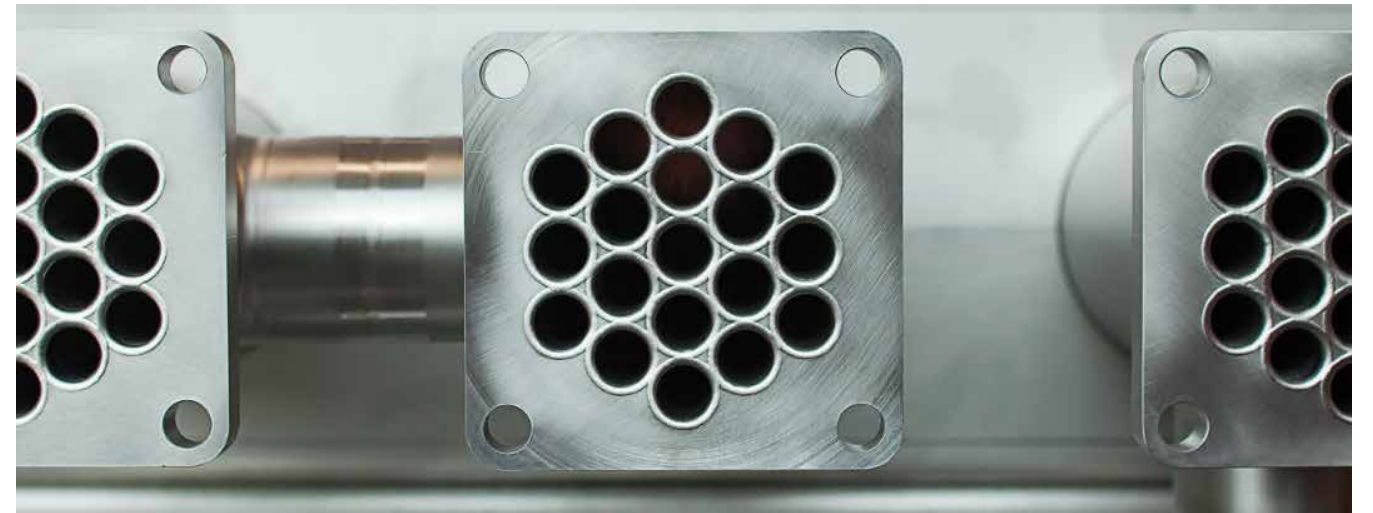




The right heat exchanger for every application

Evoguard is the ideal partner when it comes to the selection of a tailor-made heat exchanger:

- Clarification of requirements
- Individual configuration of the heat exchanger, especially customised to suit your requirements
- Rheological product characterization in the Krones laboratory possible
- Advice from experienced specialists which can access considerable databases with more than 2,000 product data

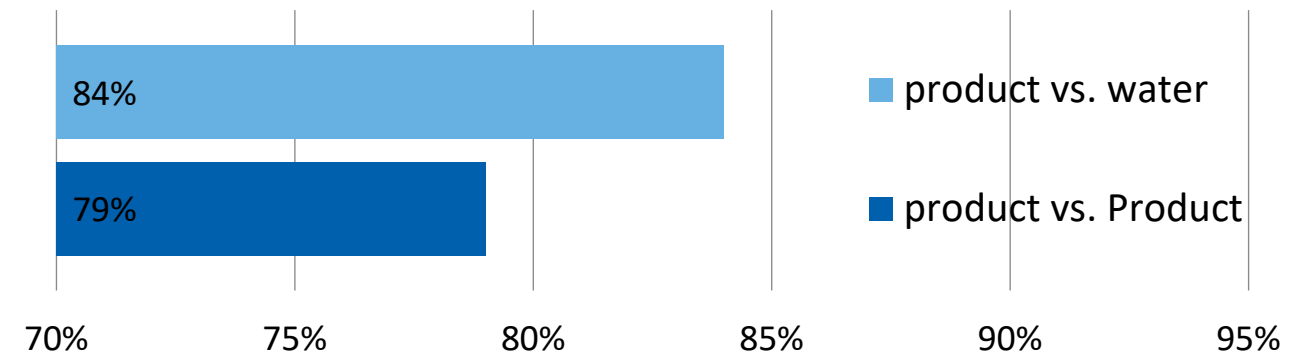


Configuration for heat recovery: Product against water

- Is well suited for a large variety of products and a wide output range
- Processes also highly viscous products or products with fruit pieces
- Flexible configuration thanks to the variable temperature on the secondary side



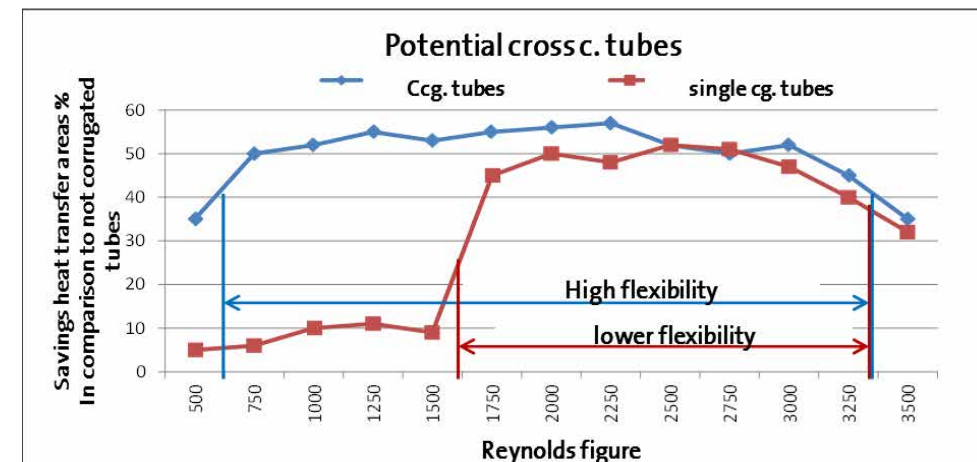
Juice
20 mPas, output: 30 m³/hours





Thermal product treatment with cross-corrugated tubes

- Breaking up of the laminar boundary layer in the product flow due to the patented structure
- Reduction of the required surface of the heat exchanger by up to 30 percent
- High turbulence over a wide output and/or viscosity range
- High flexibility in the product range and output variance
- Low thermal load
- Short heating and cooling phases





Length compensation with bellows

Stainless steel bellows on secondary side for the compensation of the heat expansion

- No dynamic seal required – therefore almost maintenance-free
- Fully welded design
- Secondary side connection via clamps
- No leakage during the cold operating condition





Extract from our broad portfolio

Module type** /PW	Rated flow rate with 2 m/s (m ³ /h)	Module length (m)	Heat exchanger surface (m ²)	Max. particle size (mm)	Pressure loss 1 Internal pipe/ external pipe (bar)	Heat transfer performance ^{1, 2} (kW)
100-17*14/1	13.8	6	4.29	5 x 5 x 5	0.29/0.07	322.9
100-19*14/1	15.5	6	4.80	5 x 5 x 5	0.29/0.07	380.4
110.3-24*14/1	19.6	6	6.06	5 x 5 x 5	0.23/0.08	488.2
110.3-16*18/1	23.2	6	5.25	7 x 7 x 7	0.23/0.13	503.9
125-19*18/1	27.5	6	6.23	7 x 7 x 7	0.23/0.10	575.8
135.7-21*18/1	30.4	6	6.89	7 x 7 x 7	0.23/0.07	616.7
135.7-17*22/1	38.4	6	6.86	9 x 9 x 9	0.15/0.12	728.8
150-19*22/1	43.0	6	7.66	9 x 9 x 9	0.15/0.15	781.3
150-22*22/1	49.8	6	8.87	9 x 9 x 9	0.19/0.20	969.5
135.7-12*25/13	34.7	6	5.49	10 x 10 x 10	0.11/0.14	554.6
150-15*25/13	44.9	6	6.90	10 x 10 x 10	0.17/0.12	741.7
150-19*25/13	56.8	6	8.74	10 x 10 x 10	0.13/0.33	1052.7

All values are based on water: ¹ Water versus water with rated flow (counterflow 1:1)

² Interior pipe inlet 20 °C, exterior pipe inlet 70 °C

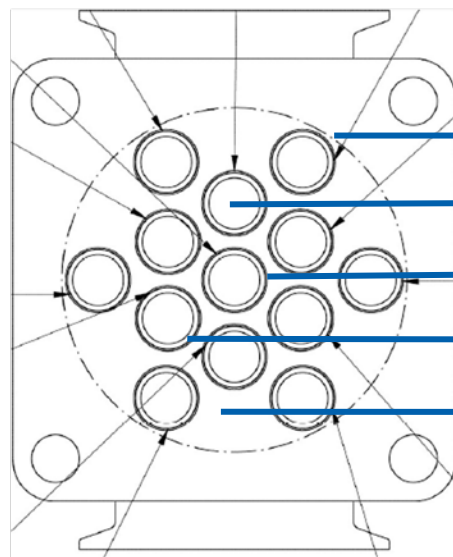
* Optional: All module types are available with pipes in cross-type swirl or smooth design;

Material: SAF2205 (certified OEM supplier/Krones design) instead of AISI 316L

** For nomenclature, see next page



Module nomenclature



Module nomenclature: 110.3-16*18/1 PW

Diameter exterior pipe (mm)

Number of interior pipes

Outer diameter of interior pipes (mm)

Wall thickness of interior pipes (mm)

PW: Product against water



Benefits to you

Specific configuration of the product treatment system

Thanks to special KRONES measuring and configuration programs, you will be provided with customised heating systems which are based on precise data and exactly adjusted to suit the characteristics of your products.

Gentle product treatment

Our special tube modules with cross-corrugated section enable a quick heat transfer and, at the same time, high recovery efficiency. As the mixture phase quantities are reduced to a minimum, the required heat exchanger surface and thereby the thermal stress, as well as the pressure and product loss are reduced as well.

Safe cleaning

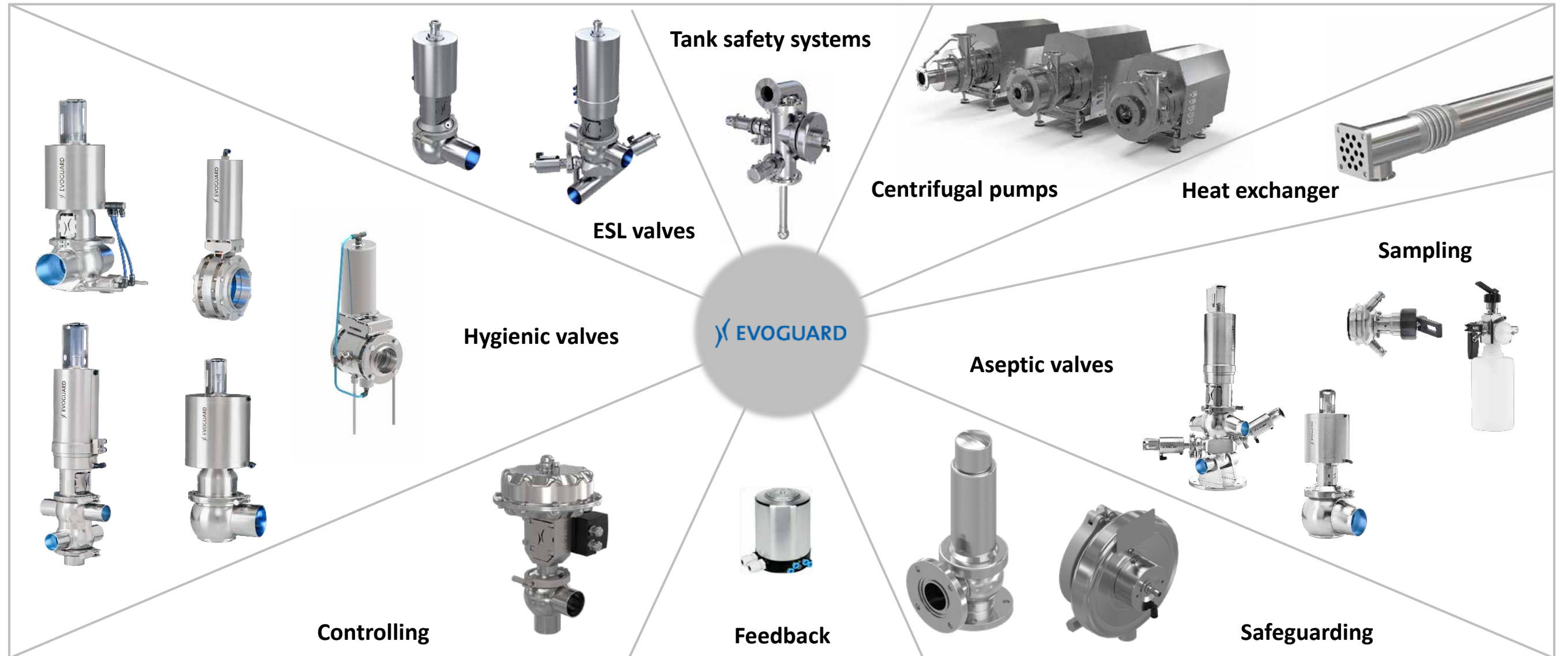
Thanks to a design with reduced dead space, all product contacting surfaces can easily be cleaned.

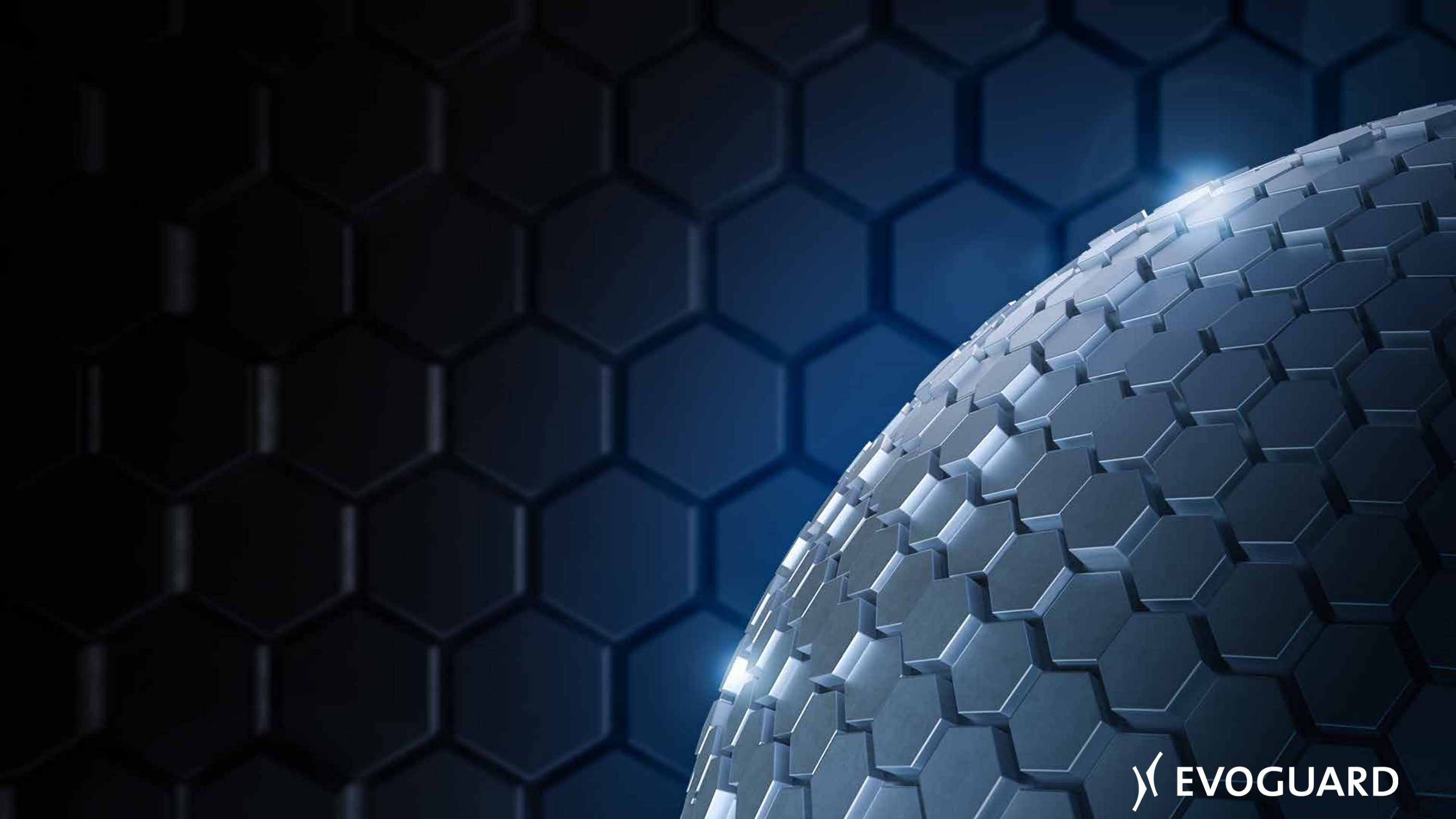
Comprehensive concepts for process technology

In addition to heat exchangers, the Krones Group also offers compact and space-saving units for product deaeration, heating and product mixing, as well as process water sterilisation and CIP/SIP systems.



Overview of our product range





 EVOGUARD