Steinecker Pegasus C

Intelligent lautering technology

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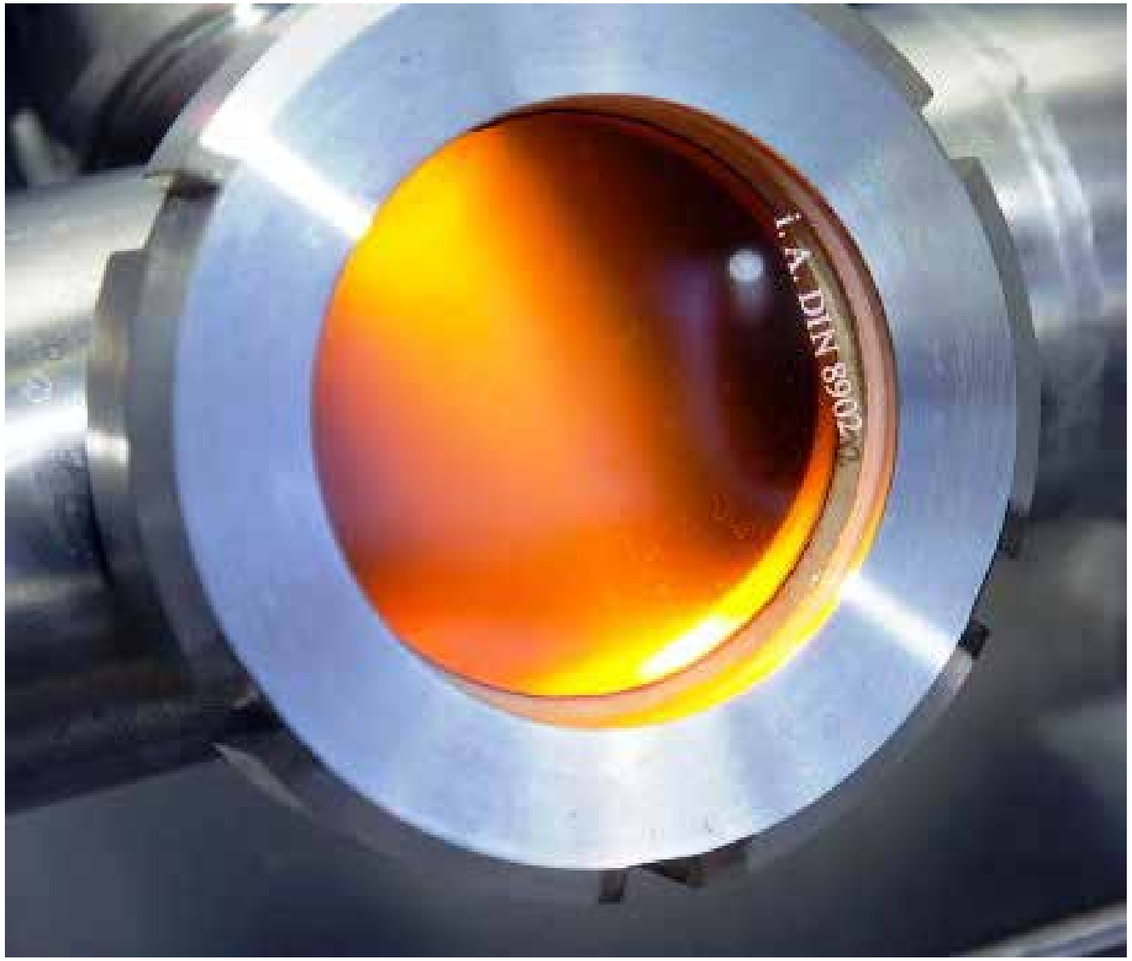
Lautering with the Pegasus – high-quality worts and economical processes

The lautering process must meet clear technological requirements: The separation of the mash must yield high-quality worts with a low proportion of solids.

And then there are the economical aspects: High brew rates are possible thanks to the fast process. Furthermore, it must also be possible to obtain almost all of the extract dissolved from the spent grains.

With the Pegasus C, the brewer uses a fully automatic lautering system which fulfils all of the requirements from a technological and economical viewpoint.



At a glance

- High extract yields through efficient leaching of the spent grains during sparging
- Flow control with the Super-Trend lautering principle for quick and even lautering
- Optimum design of the raking device for an ideal cutting pattern

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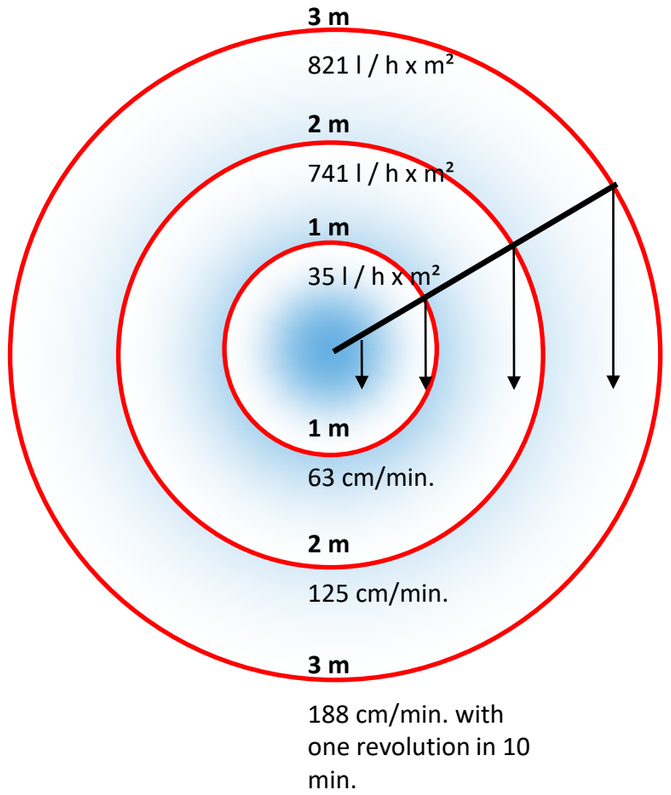
Yield limiting factor

Influence of raking device

- The further away the knives are from the centre of the lauter tun, the higher their absolute speed.
- The breaking-up effect of the raking device increases with the radius of the lauter tun.
- The outer parts of the spent grains cake become more permeable, the specific wort flow rate per m² increases.

Path of least resistance

- The wort, especially during second wort lautering, follows the path of least resistance in the spent grains.
- Therefore, in the spent grains, the sparging water flows more through the outer areas of the lauter tun.



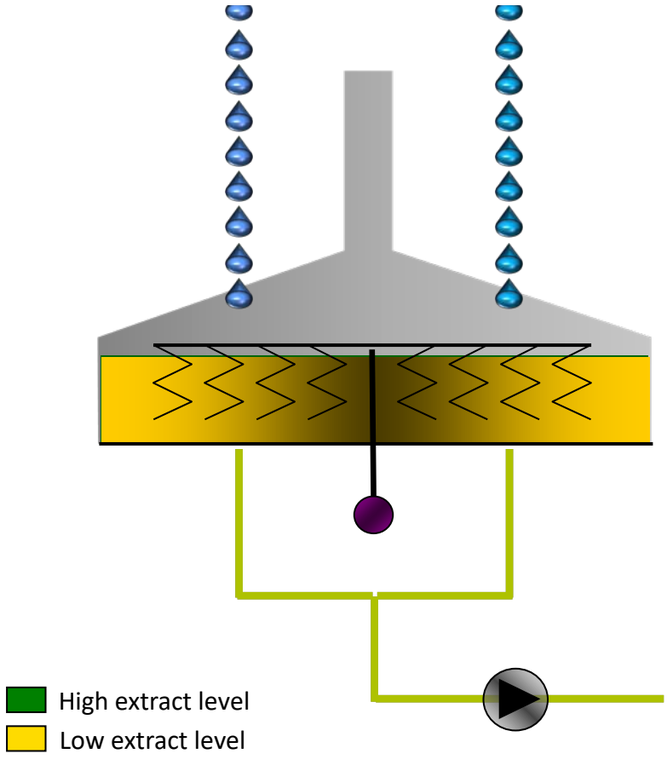
Lautering process task definition

First wort

- While the first wort is drawn off, there is no difference in the wort concentration.
- The quality, mainly the viscosity of the wort, is the same overall in the spent grains.

Second wort

- The extract remaining in the spent grains after drawing off is leached with the sparge water.
- This causes the wort to be diluted with sparge water.
- Local differences in wort concentration and viscosity lead to inhomogeneous leaching of the spent grains.
- Extract losses in the central area of the lauter tun are the result.



Pegasus C equipment and technology

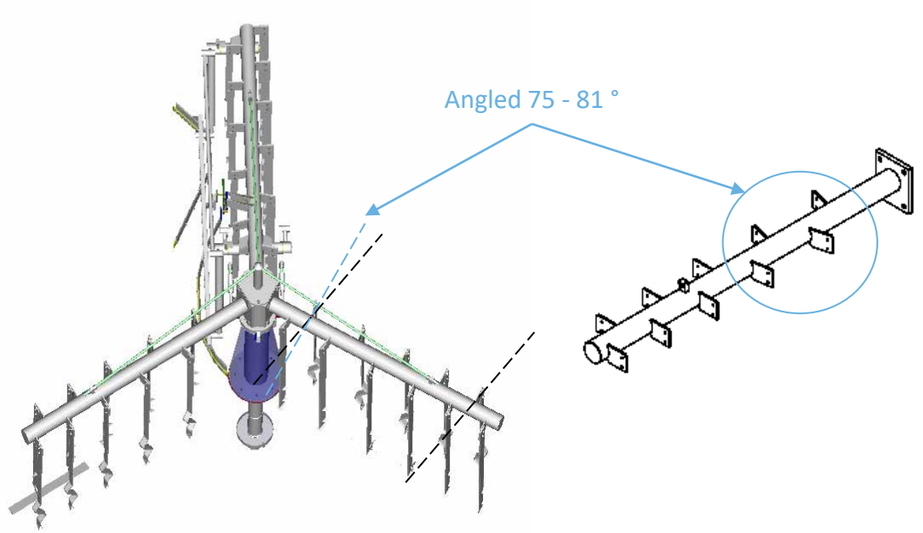
Wort collecting ring

- The run-off sources of the inner lautering area have been integrated in the tried-and-tested wort collecting ring.
- By forcing the inner lautering zone, the differences in wort flow arising from the different knives speed are compensated.
- Flow-optimised run-off technology reduces extract losses in the spent grains, especially in the central area.
- High gravity brews can be optimally produced through the possible high load on the false bottom (a first wort concentration of up to 24 °P).

Pegasus C equipment and technology

Raking device

- The knives in the inner area are adjusted to an angled position in relation to the radius to create an ideal cutting pattern. This prevents the uneven distribution of the spent grains cake.
- Therefore, it is possible to draw off the first wort into the spent grains cake uniformly.
- The number of knives is increased to up to 2.0 per m².
- A more denser arrangement* of the knives in the central area increases the permeability of the spent grains cake.
- The raised bearing support prevents the product from coming into contact with the shaft bushing.



Bearing support

** Compared to the conventional lauter tun*

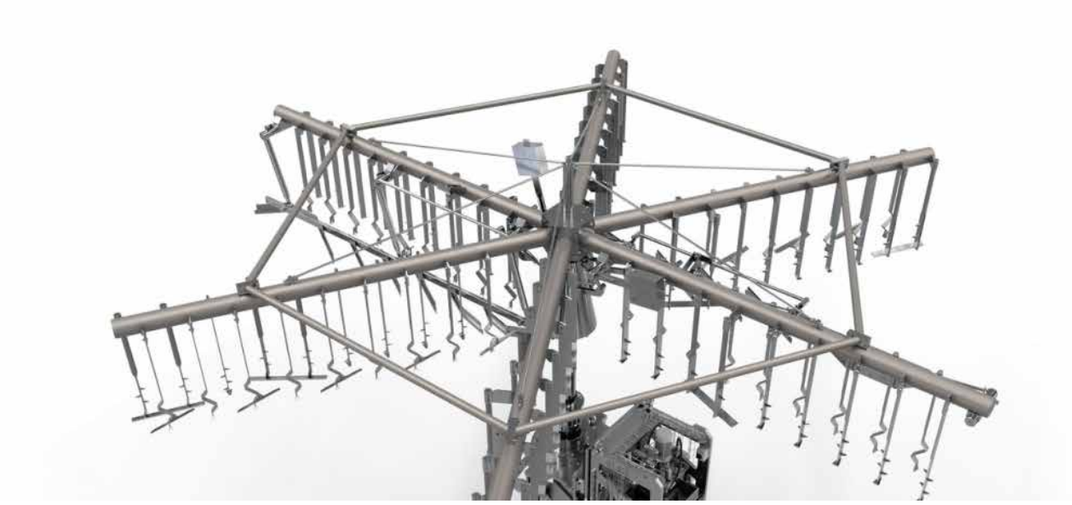
Pegasus C equipment and technology

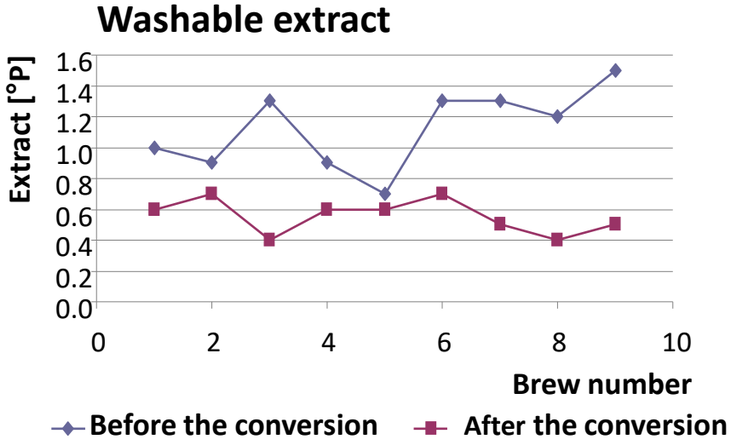
Cross-lifter

In tun diameters of 5,500 mm and higher, cross-lifters are installed to homogenise the spent grains resistance. Channelling is avoided and the spent grains are leached optimally during the sparging sequences.

What are the benefits of the cross-lifter for product quality?

- The effect of the cross-lifters on the washable extract was examined by modifying a classical raking device.
- Nine brews were lautered with the cross-lifter and nine brews without. The washable-extract values shown were analysed from an average sample of the spent grains.
- The cross-lifters achieve steadier and lower extract contents than the traditional raking device.
- The improvement is due to the homogenisation of the extracting process in the central area of the spent grains cake.





Pegasus C equipment and technology

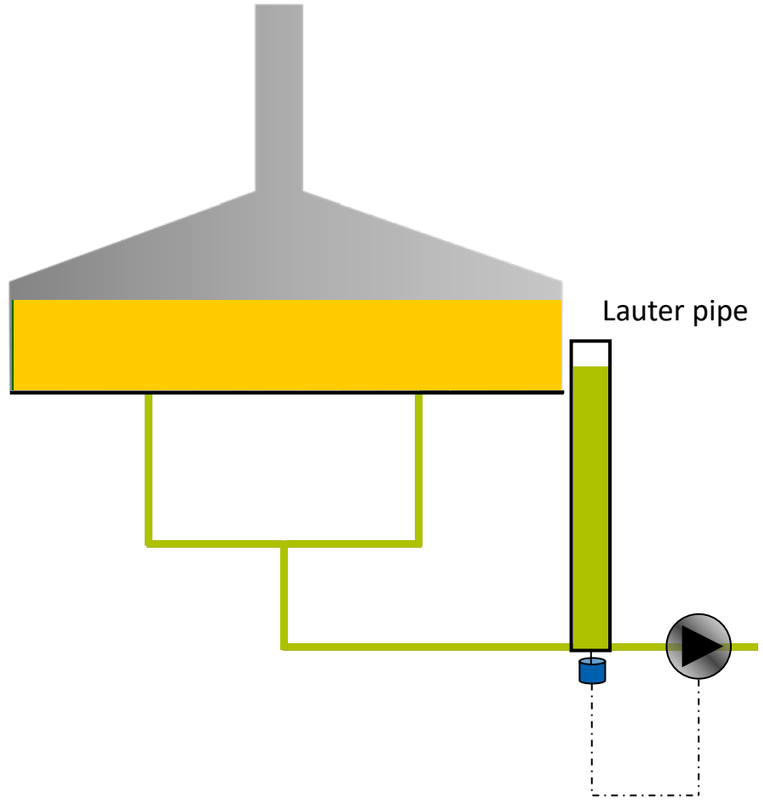
Run-off sources

- The run-off sources are configured with 1.4 openings per m² in the central area of the tun area.
- In the outer area, the number is reduced to 1.2 openings per m².
- This reduces the described problems during extraction of the spent grains during second wort lautering.
- No punctual suction effect on the spent grains within the source areas.

Equipment and technology

Super-Trend lautering principle

- The lautering principle is based on a level regulating system.
- During the first wort, the level of the wort is controlled in the lauter pipe to the level of the false bottom. As a result, the wort is removed at a speed which is achieved by the hydrostatic pressure in the spent grains.
- During second wort lautering, the level of the wort in the lauter pipe is lowered continuously. As the extraction of the spent grain progresses, its resistance drops and the flow velocity of the wort can be increased.



Facts and figures

Extract is obtained in an optimised and economical manner with the Pegasus C lautering system as:

- the even leaching of the spent grains leads to a quicker reduction of extract.
- the quicker reduction of extract results in a higher extract yield with less sparging water.
- this reduced amount of sparging water enables an energy-saving wort boiling system.
- a lower tannic acid content is achieved by reduced leaching of the husks.

Spent grains press water				
Area	Conventional		Pegasus C	
	Brew 1	Brew 2	Brew 1	Brew 2
Inside 1	3.0	3.1	0.4	0.5
Inside 2	2.5	2.4	0.6	0.6
Middle 1	0.9	0.9	0.6	0.5
Middle 2	1.8	1.6	0.5	0.6
Outside 1	1.0	1.1	0.5	0.5
Outside 2	1.0	1.0	0.6	0.5

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Benefits at a glance

Extraction of high quality worts

The brewer achieves a maximum extract yield through design adjustments in source areas and the raking device.

Technology suitable for flexible use

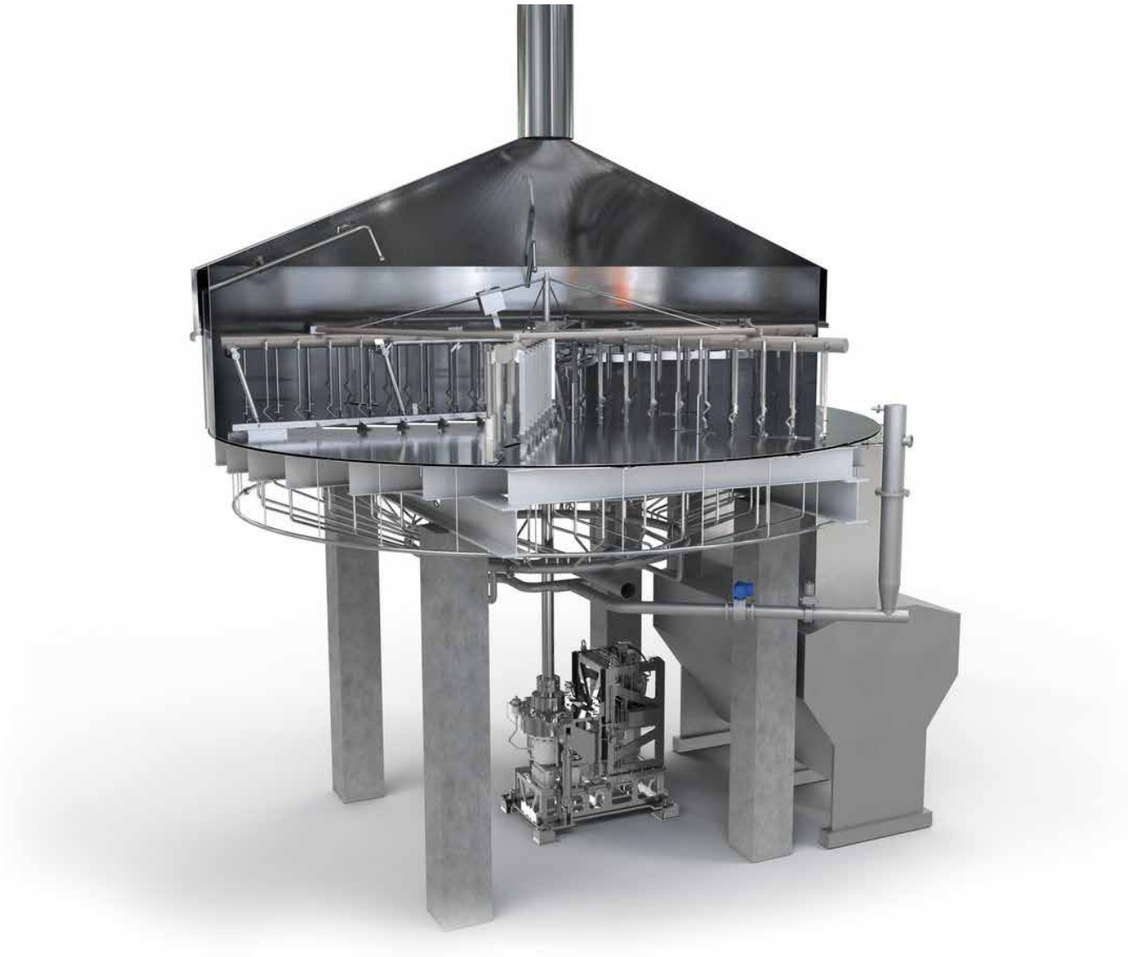
The Pegasus can also be used for high-gravity brewing processes. Pegasus offers high flexibility in the selection of the type and quantity of raw materials thanks to the wide range offered by the specific false bottom load.

Lowest maintenance and operating costs

The cleaning costs can be kept at a very low level with just one CIP cleaning process required per week. In addition, a low media consumption is also possible compared to applications where a mash filter is used.

Automated process

Fully automatic production and cleaning processes offer maximum production reliability.



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Everything from a single source

KIC Krones cleaning agents make your machine shine

Only if the production environment is immaculate, can your product be brilliant. KIC Krones provides you with the optimum cleaning agents and disinfectants for each individual production step.

KIC Krones lubricants for every production step

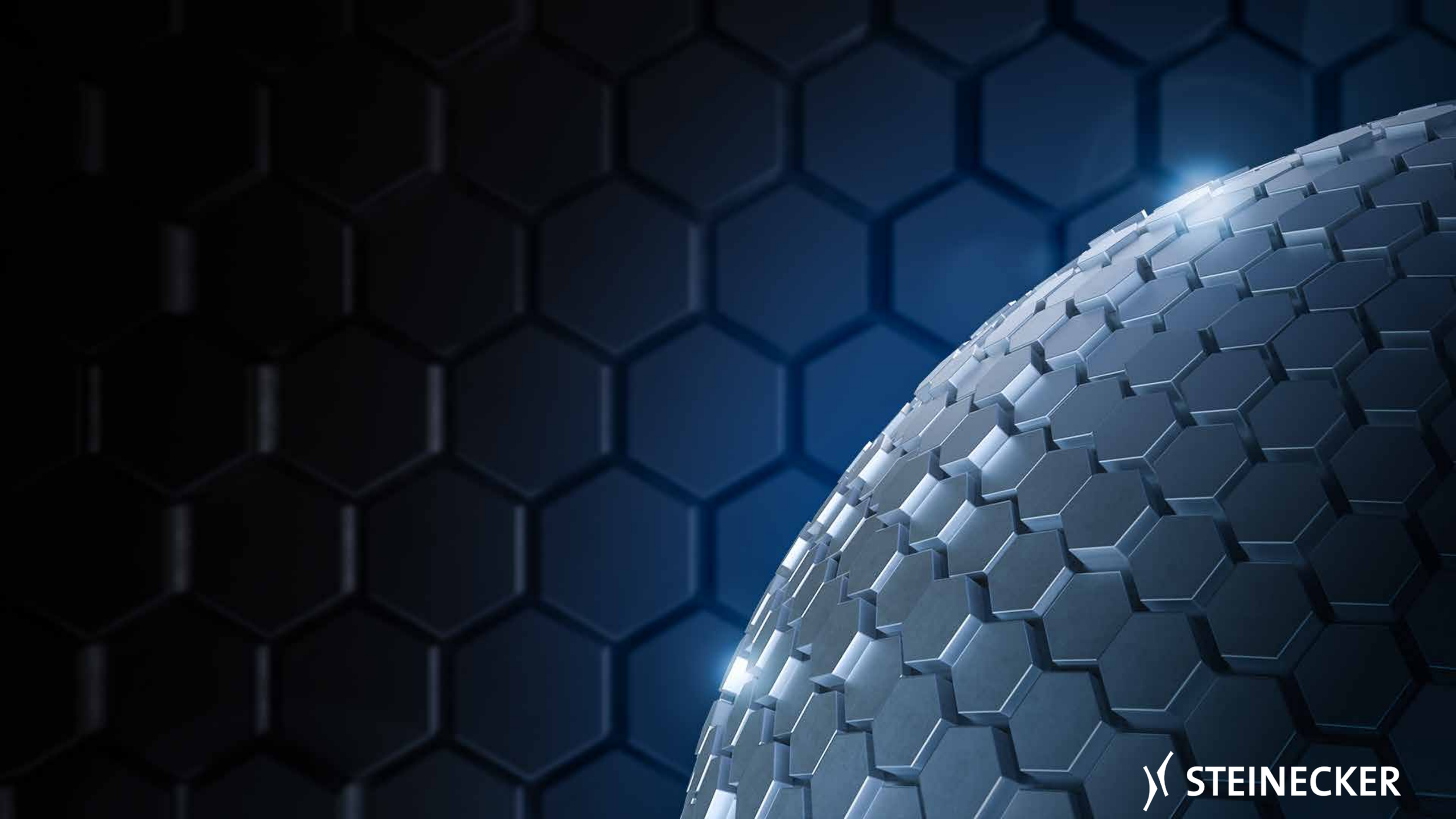
Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

Evoguard – excellent valve technology all along the line

The valve series of Evoguard comprises a modular system with hygienic and aseptic components which contributes to every point of the production line with increased performance and which has the perfect solution for every process step.

Evoguard – pumps for absolute process safety

In addition to the separation and locking of a line, one thing is particularly important – and that is the reliable conveyance of your product. This is why Evoguard also offers innovative centrifugal pumps in addition to high-quality valves.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