Do you see yourself facing the challenge of reducing wastewater volume or even more to look for solutions to reduce and reuse the waste water?

KRONES has therefore developed the HydroCircle – a concept for recycling production wastewater to new process water. All process steps that produce wastewater during production are taken into account.

At a glance

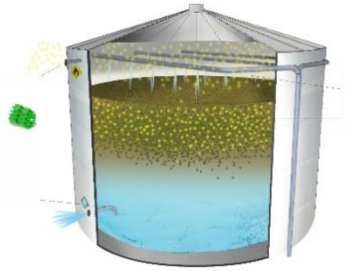
- Recycling of wastewater into process water
- Up to 80 percent lower water consumption during production
- Closed loop concept under consideration of the entire process chain
- Use of proven plant technology such as KRONES Hydronomic and patented fully biological waste-water treatment technology
- For beverage and food producers, as well as for recyclers

We can thus help you to optimize the water usage and support you on your production line and efficiency to a cost reduction matter.

HydroCircle Concept

With the HydroCircle system, wastewater from production is treated to produce new process water.
The concept takes into account all process steps that produce wastewater during production. In this way, the volume of wastewater can be significantly reduced throughout the entire production process

Thanks to HydroCircle, up to 80 percent less water is required for production - which naturally has a noticeable effect on both water costs and the company's environmental balance.



The carriers are characterised by a particularly open structure which prevents blocking and allows high material conversion rates to be achieved

Once reprocessed, process water can be reused at numerous points of production:

- at the cooling tower
- at the CIP system
- as boiler feed water
- at the washer
- at the pack washer
- at the rinser
- as grey water

The waste water treatment system can be used not only for the integration of new factories, but also for retrofitting existing factories.

Biological waste water treatment

The biological contaminants contained in waste water must first be cleaned before it can be reused. Here, KRONES uses a patented solution that guarantees high process stability.
At the heart of this technology is a unique down-draft reactor, in which the waste water is sprayed through nozzles mounted on the roof and then sinks. In the process, it migrates through anaerobic biomass, which is located in so-called carriers, i.e. biofilm carriers. The methane-enriched biogas produced in the upper part of the reactor immediately rises to the top, while water and sludge sink to the bottom and leave the reactor separately. Thanks to this down-draft technology, the chemical oxygen demand (COD) can be reduced by up to 90 percent anaerobically within a short period of time.

Hydronomic UF – modern line technology

If dissolved substances such as salt or water hardness are to be maintained and only undissolved components should be filtered, then the ultra filtration process will be employed. In doing so, the Hydronomic system removes UF particles up to a size of 0.02 µm from the raw water including microorganisms:

- In/out operation where the water to be cleaned is pressed into the hollow fibre and escapes laterally through the membrane pores with a size of 0,02 µm
- Discharge of the ultra filtrate to a central collecting pipe
- Cleaning of the hollow fibre elements via periodic backwashing with an ultra filtrate against the direction of filtration

The components

- Use of especially developed hollow fibre membranes with the dead-end-filtration method
- Parallel production and rinsing operation without rinsing water tank possible via filtration modules which can be switched separately

Efficiency in figures

- Filtration performance: up to 120 m^3/h
- Rinsing water consumption: max. 36 m^3/h
- Yield: Up to 99.9 %
- Sanitisable: up to 85 °C

Hydronomic RO: water – as pure as it gets

The Hydronomic RO module serves to desalinate water down to a usual residual content of less than three percent.

- Tangential flushing of a semi-permeable membrane with untreated water
- Discharge of the ultra filtrate to a central collecting pipe
- Flushing with permeate to prevent scaling and biofouling

The components

- Consecutive switching of several spiral modules (bank configuration) for graduated concentrate treatment
- Separation of the spirally-wound membrane surface via mesh spacer
- The use of specially designed, storable and dry membranes: Spare parts storage on stock possible

Efficiency in figures

- Permeate volume: up to 120 m³/h
- Yield: up to 97 %

Sanitisable: up to 85 °C

For more information please contact:

PT. KRONES MACHINERY INDONESIA
The Blugreen Office Tower, 6th Floor, Unit D-Blue
Jl. Lingkar Luar Barat No. 88, Puri Kembangan
Jakarta Barat 11610, Indonesia

Telephone : +62 (21)2952 7262 ext 116 (Hunting)
Mobile : +62 811 8468 130
Fax : +62 (21)2952 7263
Email : Christine@krones.co.id
Website : www.krones.com