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Complete concept for wastewater recycling: up to 80 per cent less water consumption

Between one and three litres per litre of beer or soft drinks, two litres per kilo of PET – during a production operation, very substantial quantities of wastewater are created. For precisely this reason, not only beverage and liquid-food producers, but also recyclers are continually seeking solutions for downsizing this wastewater incidence.

Since Krones over the course of time has already optimised its individual machines for enhanced efficacy, the complete-system vendor has now expanded the horizons of its corporate capabilities to factory level: a treatment concept has been developed for converting wastewater from the production operation into new process water. This covers all the process steps involved that give rise to wastewater in production.

From effluent to process water

In this concept, all the process wastewater from the production operation is passed through the existing network of gullies into a central storage basin. From there, any solids it contains are sieved out, whereupon the wastewater is neutralised in a collecting tank. The next step in the process, depending on the size of the system concerned, is traditional-style water treatment. If very sizable quantities of wastewater are involved, it is expedient to use an anaerobic stage: this will then produce biogas, which can be re-used in a unit-type cogeneration plant, for example.

Once all the residues have been removed from the wastewater, it needs to be treated to make it suitable again for use as process water. This is where Krones’ Hydronomic water treatment systems come into play. By means of ultra filtration and reverse osmosis, even the tiniest particles like micro-organisms or salts are filtered out of the water. Following the subsequent admixture of chlorine dioxide in order to disinfect and stabilise the water, it is ready to be used again in the production process.

The closed-circuit concept enables the water consumption in the production operation to be substantially reduced: up to 80 per cent less water is now required – which of course has a perceptible effect on both the company’s water costs and its environmental performance balance. The system can not only be installed in new factories, it can also be retrofitted in existing plants.

Fig.: Krones-201203SC04\_01.jpg

Thanks to ultrafiltration and reverse osmosis, even the tiniest particles such as microorganisms or salts are filtered out of the water with the Hydronomic processing system from Krones.

**Your contact:**

Ingrid Reuschl

Head of Public Relations

KRONES AG

Tel.: +49 9401-701970

E-Mail: presse@krones.com