

# Brewery Water Quality Solutions

Inlet and Outlet Monitoring and Treatment Equipment



**bürkert**  
FLUID CONTROL SYSTEMS

## Water: The Key Ingredient of Every Brew

Water is the lifeblood of any beer, and by volume comprises 90 - 97% of each and every pint, bottle and can of beer that we drink. As such, water quality is of paramount importance in the brewing process and a critical factor in the taste, quality and repeatability of the final product of any brewery operation.

With so much relying on water quality the water coming into a brewery it is so rigorously monitored and tested to ensure purity, quality and consistency before it becomes the most important component of the brew. However, not all of the water that's used around the brew house makes its way through the packaging line. Similar to the water coming into the brewery, the water and other solutions exiting the brewery as a waste stream must also be afforded attention.



## Water Chemistry is Beer Chemistry

### Conductivity

Conductivity is a critical parameter in water quality monitoring that can have a huge impact on the taste of the beer. Dissolved substances like Calcium, Magnesium, Sulfate, Sodium, Bicarbonate, and Chloride all contribute to the conductivity of the brewing water. Along with Calcium Carbonate, these contribute to the hardness of the water, a measurement essentially analogous to conductivity that can be monitored in order to help perfect burtonization and, therefore, the distinct and sought-after flavor profiles indicative of various styles of beer.

### pH

pH is another key parameter to be measured and monitored in brew water chemistry. Effective maintenance of proper pH levels in the mash and the wort is highly dependent on the accurate measurement of inlet water pH. Here, inline pH monitoring can eliminate the trial and error/litmus paper method and increase the efficiency and repeatability of your mash process.

pH is also a critical parameter in the effective monitoring of the effluent stream. The combination of CIP chemicals, cleaning solutions, yeast, wasted beer and other fluids yield an effluent stream that requires neutralization before release to a municipal treatment system.

## Environmental Agency Compliance/Green

There are a number of waste streams created by the brewing cycle. These include settled trub, CIP acids, caustic sodas, keg cleaner, etc. that can combine to yield a cocktail of unknown pH and BOD load. Failure to monitor effluent content and subsequently treat it to specified pH, ORP and Chlorine levels can lead to penalties and fines from municipalities and local environmental protection authorities.



## Unique Need-based Engineered Systems

It's probably not difficult to see how different water sources, different breweries, different methods and different local regulations all work together to establish unique sets of water supply and effluent treatment requirements. Similarly, the Craft brewing industry is known for delivering products as unique and diverse as the individual brewers that create them. This uniqueness gives way to a potentially boundless range of customized system solutions all of which are based on the same tried and true brewing principles. Burkert not only manufactures the components needed to monitor the parameters for compliance, but also designs and builds value-creating systems based on unique customer needs.

From water quality monitoring systems to fermenter CO<sub>2</sub> recovery and reuse in packaging, to solar-based HLT solutions or even de-alcoholization systems, Burkert has the competence and experience to make your brewery more efficient and repeatable while preserving everything that makes it craft.

**Burkert Fluid Control Systems**

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