CONTROLLED STABILIZATION SYSTEM CSS
The stabilizing system for the beverage industry
A LEAP OF PROGRESS

→ The CSS is a gentle but highly effective beer stabilization
→ The CSS is the cost effective stabilization alternative to regenerable PVPP method
→ The CSS is a compact build, fully automated stabilizing plant
→ The CSS stabilizing agent remains in the filter plant and can be regenerated and reused without losses for several years
→ The CSS is easily incorporated into any existing filter line and automation
Filtered, unstabilized beer flows through the CSS module containing the adsorbent. A contact time of a few seconds is enough to remove polyphenoles by adsorption. The adsorbent itself is based on a high-grade, crosslinked, insoluble agarose (polysaccharide) with a particle size between 100–300 μm. Polyphenoles are adsorbed and then removed from the agarose adsorbent during the regeneration. Neither substances are dissolved in the beer nor is the beer quality affected in a negative way. The beer's organoleptic properties, its foam stability, color and bitterness units remain unaltered.
INNOVATION AT YOUR FINGER TIP

**Stabilization**

The CSS beer stabilization is fully automated, a touch of a button at filtration start is all it takes. Over the time of the stabilization run the flow rate adsorber/bypass is regulated automatically, so that the consistent stability is guaranteed throughout the stabilization run. Adjustments to accommodate changing conditions, beer types and stabilization requirements can be made easily, based on the data stored in the program.

**Regeneration**

The adsorbent can be regenerated several hundred times with caustic (NaOH). Sterilization is carried out with hot water.
CSS Stabilization

A defined amount of beer flows through the adsorber → Intensive stabilization

A defined amount of beer flows through the bypass → Unstabilized

Both beer streams are then blended. The ratio adsorber to bypass gradually rises during the saturation of the adsorber → Uniformly stabilized beer is being produced → Easy adjustments to the ratio give the brewer the possibility to freely select the desired stability

All of the described process steps do take place within the fully automated CSS plant:

CSS Adsorber

uniformly stabilized beer, adjusted to your desired beer stability and shelf

flow meter

controlled by regulating valve

defined amount of unstabilized beer to CSS chamber

unstabilized beer from filter

controlled by flow meter

stabilized beer

blending point

uniformly stabilized beer, adjusted to your desired beer stability and shelf

defined amount of unstabilized beer in bypass

control unit

flow meter
STABILITY GUARANTEED

The stability test as the most important test for beer stability, convinces unconditionally.

The CSS achieves excellent beer stability while treating the product gently.

The treatment with the CSS generally removes fewer substances than PVPP. The adsorption of low molecular polyphenoles is lower. The organoleptic properties, the foam stability, beer color and bitterness units of the beer remain unchanged.
Quality advantages
→ The degree of stabilization is adjustable
→ The CSS can be used over a long period of time with consistent results

Environmental advantages
→ The amounts of water (waste water) and chemicals required for the regeneration and CIP are very low

Technological advantages
→ The adsorbent is chemically/physically stable, so that it can be regenerated without any losses
→ Due to the compact module, the CSS next phase volumes and pre and post runs are very small
→ The CSS has a small footprint and does not require much room height
→ Installation behind DE- or Crossflow Filter
→ Continuous stabilization possible

Economical advantages
→ Comparatively lower investment costs
→ Short time return on investment
→ Low operating costs
→ Stabilizing costs can be budgeted accurately over several years
→ Fully automated process reduces labor costs
→ No storage, logistics and ordering of lost stabilizing material
YOUR PARTNER.
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