

Brew Cleaning

Hygiene is critical to making a good brew. We get a kick out of seeing bright shiny surfaces, however there is more to it than just the aesthetics. Any good brewer will tell you that cleaning and sanitising is essential, but can we do it better?

When the 'go to' chemical in the industry is caustic, we thought that there are (or must be) opportunities to work smarter. And we've been looking into this for some time. Our philosophy on cleaning and sanitising is that it should be safe, effective and have a low environmental footprint.

So let's start from the top. Cleaning. We're defining this as:

"Cleaning is the complete removal of food soils/solids using appropriate detergent chemical under recommended conditions" (Schmidt, 2009).

When we look further at the specifics for breweries, cleaning involves the removal of organic soils, malt, starch, sugars, lipids, hop oils, resins, tannins and proteins. The pH of beer is mildly acidic too.

Caustic is sodium or potassium hydroxide and has a pH of 14. It is a very strong alkali salt. Looking first at the benefits. Caustic is good for de-colourising and dissolving some highly acidic organic soils. For cleaning purposes the benefits of caustic stop abruptly here.

One key problem of using caustic when cleaning is that it increases the surface tension between soils and the surface to be cleaned. Objectively, caustic makes the bond of organic soils stronger. This means it is harder to remove solids from the surfaces of stainless steel.

The overly high pH of caustic also isn't doing brewers any favours. The pH means it is also possible to de-nature (or burn) proteins onto surfaces resulting in a brownish stain (which can be removed by hard scrubbing). Commodity caustic also won't help with oils or resins leaving them behind to be scrubbed later.

To clean effectively we need the opposite effect. We want to reduce the surface tension of soils and solids so that they can be rinsed from a surface. This is exactly what detergent does when you wash your dishes at home – the detergent, chelates, wetting agents and surfactants make it much easier to clean.

Caustic is also terrible for the environment. It is a strong salt – and a build-up of sodium can lead to sodic soils and a build up of potassium can also have a negative impact also.

While there are benefits to alkaline salts (de-colouring, good for dissolving acids) it is important that it isn't too strong. Most importantly a cleaning agent needs to have good detergency, and where used for beer-specific cleaning the chemical needs a mechanism where it can emulsify oils and resins so these can be rinsed from surfaces.

The fact that caustic products burn means they are dangerous. To clean effectively, often will involve CIP (Clean In Place – ie circulating a cleaning solution) as well as some manual scrubbing. To manually clean with a class 8 dangerous good that is corrosive is risky business.



We thought that we could do better. So we've made Beerox, a smart cleaning agent designed especially for brewers. Using non-dangerous high quality, environmentally friendly inputs so that your stainless steel, concrete and plastics will gleam leaving you to focus on your next brew.

Like to know more – [talk to us](#).

Ronald H. Schmidt, 2009, "Basic Elements of Equipment Cleaning and Sanitizing in Food Processing and Handling Operations", FS14 is one of a series of the Food Science and Human Nutrition Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date July 1997. Revised March 2009. Reviewed January 2012