

THE SCIENCE BEHIND GREAT TASTING BREWS.

IT ALL STARTS HERE

Beer is mostly water, so brewing with the right water can greatly enhance your brew.

- pH & ALKALINITY**
[pH] The alkalinity of the water balances the acids the brewing process releases, and maintains optimal pH.
- CHLORINE**
[c] Residual chlorine in municipal water can interfere with the brewing process, and may produce an “off” flavor.
- CALCIUM**
[Ca] Calcium and other mineral salts affect alkalinity, pH, fermentation, clarity, and taste. Maintaining consistent calcium levels across every batch is key.

PRODUCTION, QUALITY CONTROL & PACKAGING

Testing all through the fermentation, filtration, and packaging steps ensures that every batch is a great quality beer.


- pH & ALKALINITY**
[pH] Mash, boil, and fermentation all impact pH. pH imbalance can be a sign of undesired organisms or infection. Total acidity is a better indicator of flavor than pH, and is important for sour brews.
- DISSOLVED OXYGEN**
[O] Monitor the oxygen levels in the wort, when the yeast needs plenty of oxygen. Happy yeast makes for good beer.
- BITTERNESS, COLOR & TURBIDITY**
[IBU] Various key parameters must be met, including bitterness (IBU value), color of the wort, color of the finished beer, diacetyl levels, and FAN nutrients. Unwanted microbes can lead to turbidity and altered taste.

WASTEWATER TREATMENT

Since wastewater plants are not equipped to treat high-strength wastewater from mid-size or large breweries, you’ll need to take extra steps toward preparation.

- pH NEUTRALIZATION**
[pH] Whether high or low, pH must be neutralized before it enters the local sewage system. Breweries risk penalties if their wastewater is outside required limits.
- SOLIDS REMOVAL**
Turbidity correlates to the suspended solids in wastewater. High levels will incur “strength charge” fees.
- BIOLOGICAL TREATMENT**
[BOD] Biological oxidation (BOD) and chemical oxidation (COD) measurements indicate the biological and chemical oxygen demand of the wastewater. It is important to limit these components because high levels will incur “strength charge” fees.






PRODUCE YOUR BEST BREWS WITH THERMO SCIENTIFIC EQUIPMENT.

WATER PURIFICATION SYSTEMS	TITRATORS FOR ALKALINITY & ACIDITY TESTING	SHAKERS & LAMINAR FLOW HOODS FOR CULTURING YEAST
BENCHTOP & PORTABLE PH METERS	TURBIDITY METERS FOR STABILITY & CLARITY TESTS	WATER BATHS FOR SAMPLE PREP
ION SELECTIVE ELECTRODES FOR AMMONIA, CHLORIDE, ETC.	UV-VIS SPECTROPHOTOMETERS FOR BITTERNESS, COLOR, COD, AND NUTRIENTS	DRYING OVENS FOR BARLEY, MALT & GRAINS

Using the right tools & analyses can help you overcome challenges, and provide a strong foundation of good brewing.



Find out more at thermofisher.com/beer

These products are intended for General Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific use or application.
© 2021 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. COL115652