



Thermo Scientific
Beer Analysis Products



Great Beers

Start With Great Chemistry

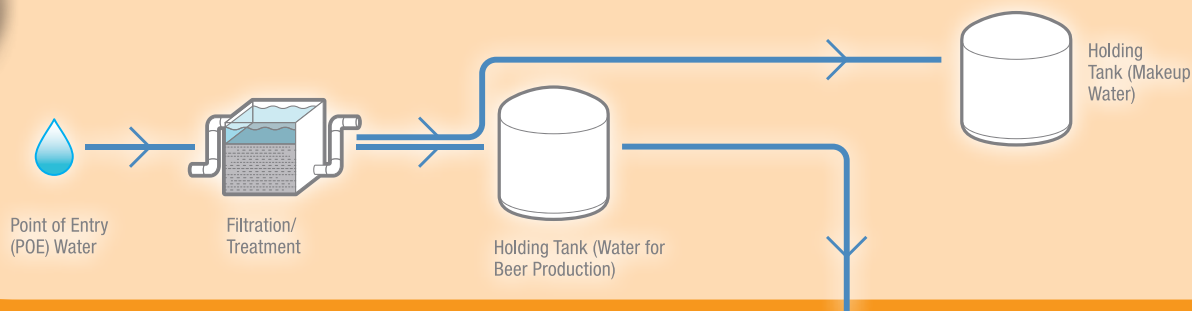
Thermo
SCIENTIFIC

You have great beer down to a science.

Quality ingredients, the right recipe, and a careful brewing process mean you can create the beer you envision. We offer durable, high quality instrumentation and robust equipment that can help you analyze your starting ingredients, optimize your brewing process and quality check the final product. On the production floor and in the lab, Thermo Scientific™ analyzers, sensors, meters and equipment support your incoming water treatment and wastewater monitoring, as well as key steps in the brewing process.

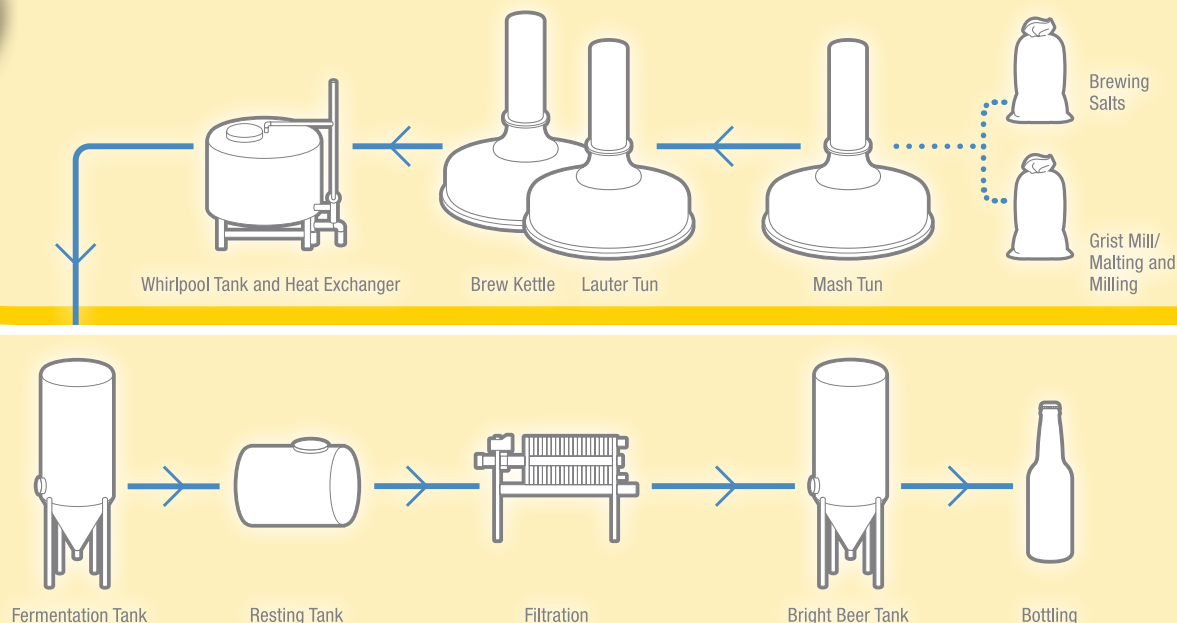
STEP
1

Point of Entry (POE) Water Treatment



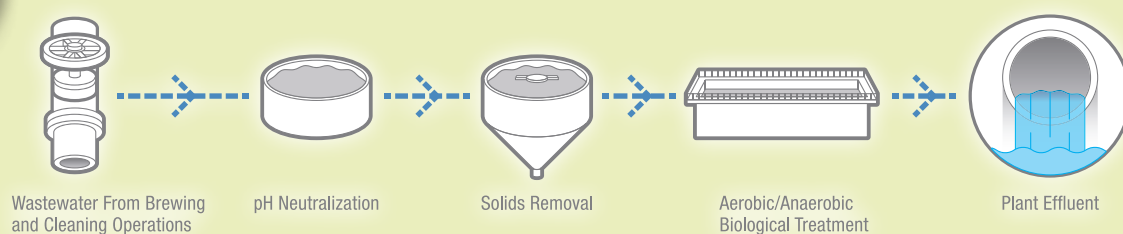
STEP
2

Beer Production, Quality Control and Packaging



STEP
3

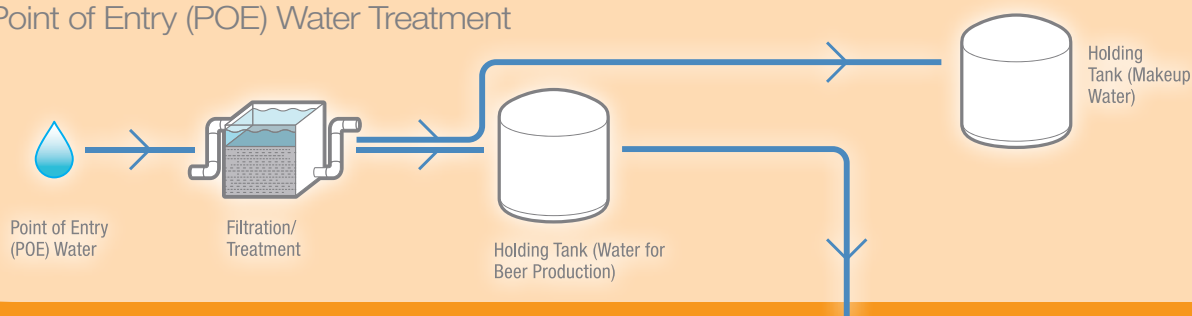
Treatment of Wastewater from Brewing Operation



STEP 1

Incoming Water Treatment and Monitoring

Point of Entry (POE) Water Treatment



A beer's flavor profile depends on the chemical profile of the water used for brewing. Thermo Scientific water analysis products are designed to be durable, low-maintenance, and easy to use. Test your water and get your results quickly and easily so you can create the water profile you need to get on with your brewing.

Measurement	Thermo Scientific Products for Grab Sample Analysis	Thermo Scientific Online Process Products
pH with Temperature	Thermo Scientific™ Orion Star™ A211 pH benchtop meter kit or Orion Star A221 pH portable meter kit (also measures total alkalinity)	Thermo Scientific™ AquaSensors™ DataStick™ pH system
Turbidity	Thermo Scientific™ Orion™ AQUAfast™ AQ3010 portable turbidity meter	AquaSensors DataStick wide-range turbidity system
Chlorine*	Thermo Scientific™ Orion™ AquaMate™ 8000 UV-Vis spectrophotometer or AQUAfast AQ3700 portable colorimeter	Thermo Scientific™ Orion™ Chlorine XP™ water quality analyzer
Conductivity and TDS with Temperature	Orion Star A212 conductivity benchtop meter kit or Orion Star A222 conductivity portable meter kit	AquaSensors Datastick Conductivity system
Sodium Ion Concentration	Orion Star A214 pH/ISE benchtop meter pH and sodium ISE kit	
Calcium Ion Concentration	Orion Star A214 pH/ISE benchtop meter kit and Orion 9720BNWP calcium ISE	Orion 2120XP calcium hardness analyzer
Ozone*	AquaMate 8000 UV-Vis spectrophotometer or AQUAfast AQ3700 portable colorimeter	AquaSensors DataStick dissolved ozone measurement system

*Additional AquaMate and AQUAfast Test Parameters Include Alkalinity, Aluminum, Bromine, Chloride, Chlorine Dioxide, Color, Copper, Fluoride, Hardness, Iron, Manganese, Nitrate, Nitrite, pH, Phosphate, Silica, Sulfate, Zinc



Thermo Scientific Orion AquaMate 8000 UV-Vis spectrophotometer

With over 260 pre-programmed water analysis methods, user-customizable methods, an intuitive graphic interface, long-life lamp and one-point calibration, the AquaMate 8000 is designed to save analysis time, maintenance time and cost.



Thermo Scientific Orion Star A222 portable conductivity meter

Dependable and easy to use, the Orion Star A222 portable conductivity meter offers advanced features and functions to help you get the measurements you need quickly and easily. Waterproof IP67-rated housing design offers durability and rugged performance.



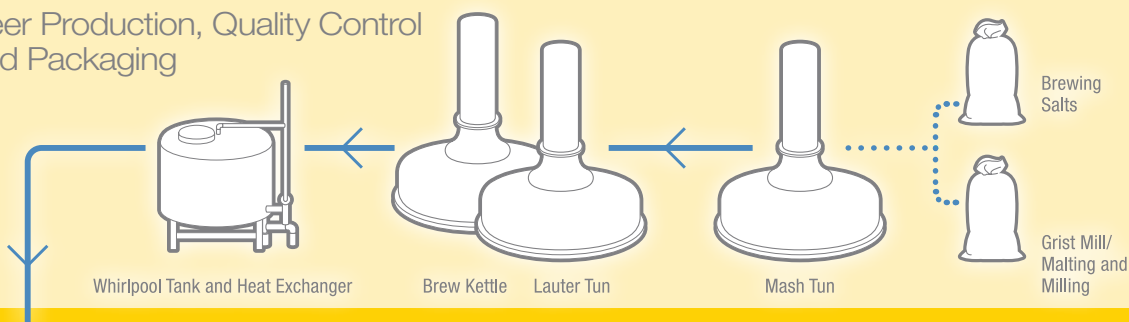
Thermo Scientific Orion Chlorine XP water quality analyzer

Measure free, total, and both free and total chlorine along with pH and temperature online with the Orion Chlorine XP analyzer. The self-adjusting light source changes intensity based on sample type, providing 10 ppb resolution with a 0-10 ppm range.

STEP 2

Beer Production and Quality Control Testing

Beer Production, Quality Control and Packaging



Getting the right flavor profile and maintaining consistent quality takes diligence. Incoming material monitoring, control of the brewing process and quality control on the finished product all contribute to beer profile consistency.

To get the job done, you need high quality, reliable tools that are easy to use and maintain. Thermo Scientific laboratory instruments give you the feedback you need to ensure you get the consistent beer you want. Our laboratory equipment includes automated procedures and step-by-step instructions to enable testing at any step of the process.

Thermo Scientific instruments and equipment are designed to be easy to use and maintain, so you get reliable results, even in challenging environments throughout the brewing process.

Process/Application	ASBC Method	Measurement	Thermo Scientific Product
Incoming Material Monitoring	BEER-9 Sugar and syrups-9	pH determination	Orion Star A221 pH portable meter kit
Incoming Material Monitoring	BEER-8 Sugars and syrups-10	Total acidity (titration)	Orion Star A221 pH portable meter kit
Malting	BARLEY-5 MALT-3 GRAINS-4	Germinative capacity of barley Moisture content of malt Moisture content of wet samples	Thermo Scientific™ Heratherm™ heating/drying ovens
Mash Tun/Mashing	WORT-8 / BEER-9	pH determination	Orion Star A221 portable meter kit
Laurer Tun/Lautering	WORT-12	FAN in wort	Thermo Scientific UV/Vis spectrophotometer
Aeration of Wort and Fermentation Monitoring		Dissolved oxygen using optical method	Orion Star A323 portable RDO/DO meter kit



Thermo Scientific Orion Star A221 pH portable meter kit for Brewers

Orion Star A221 pH portable meter together with an Orion 8107 ROSS Ultra Triode provides simultaneous temperature and pH readings using simple, step-by-step menus, which walk you through how to calibrate and measure pH. The pH sensor has an 18 month warranty supporting long electrode lifetime.



Thermo Scientific Orion Sure-Flow pH electrode

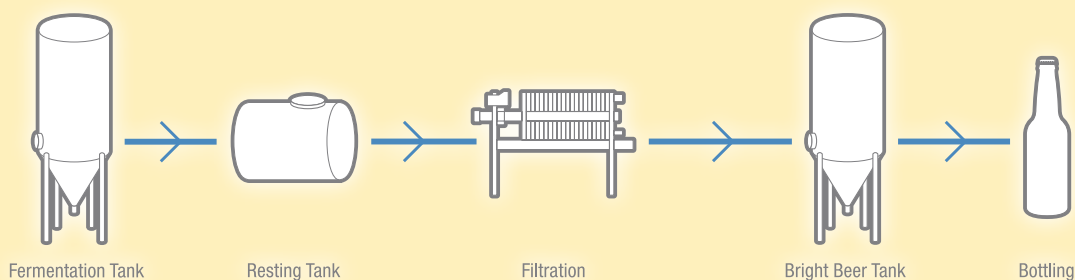
Messy, viscous or solid containing samples are no match for the Orion Sure-Flow Electrode. This unique electrode can be flushed out after every use by pressing on the cap.



Thermo Scientific Heratherm heating/drying oven

Test barley and determine moisture content in samples with Heratherm heating and drying ovens, designed with sample preservation as a top priority. Easy to use and easy to clean, Heratherm ovens offer high temperature accuracy with low energy consumption.

Beer Production and Quality Control Testing (Cont'd)



Process/Application	ASBC Method	Measurement	Thermo Scientific Product
Beer Filtration	FILTER AIDS-2	pH of water suspension	Orion Star A211 benchtop meter kit with a Thermo Scientific™ Orion™ 9165BNWP combination Sure-Flow™ pH electrode
Filtration, Resting Tank	BEER-27	Haze	AQUAfast AQ3010 turbidity meter
Quality Control Testing	BEER-23	Bitterness determination	Thermo Scientific UV/Vis spectrophotometer
Microbiological Testing		Sample preparation	Thermo Scientific Compact Digital Mini Rotator, with digital speed control of 50 to 300 rpm
Microbiological Testing		Sample incubation	Thermo Scientific Heratherm microbiological incubators
Sample Preparation, Glassware Rinse Gassware, Provide Water for Lab Equipment			Thermo Scientific™ Barnstead™ Water Purification Systems



Thermo Scientific Orion Star A214 benchtop pH/ISE meter

Designed for dependability and ease-of-use, the Orion Star A214 pH/ISE benchtop meter offers the pH and total acidity testing capabilities of the Orion Star A211 pH benchtop meter plus the ability to measure ion concentration when paired with an ion selective electrode for common water parameters such as sodium and calcium levels. The meter's advanced features and functions can help you get the measurements you need quickly and easily.



Thermo Scientific Compact Digital Mini Rotator

Space-saving and versatile, the Compact Digital Mini Rotator offers digital speed control of 50 to 300 rpms and can be used for beer degassing and microbiology testing sample preparation.



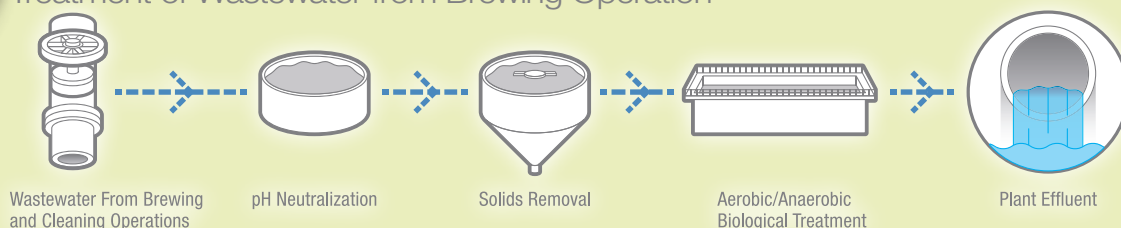
Thermo Scientific Barnstead Smart2Pure water system

Enjoy options, convenience, and consistency in a lab water system. Choose the system best suited for your application needs, such as making buffers, diluting samples, providing purified water for use as the solvent in sensitive applications, or for other lab equipment (glassware washers, autoclaves, and more).

STEP 3

Outgoing Water Treatment

Treatment of Wastewater from Brewing Operation



Brew responsibly and save money by treating your brewery wastewater. Rely on Thermo Scientific water analysis instruments to give you fast, reliable information to help you ensure your outgoing water supply meets your required limits.

Process	Thermo Scientific Wastewater Laboratory Products	Thermo Scientific Online Process Products
pH Neutralization	Orion Star A211 pH benchtop meter kit or Orion Star A221 pH portable meter kit	Thermo Scientific™ AquaPro™ multi-input analyzer with an Orion pHr Process ROSS electrode
Turbidity Measurement	AQUAfast AQ3010 turbidity meter	AquaSensors DataStick wide-range turbidity measurement system or DataStick suspended solids turbidity measurement system
Biochemical Oxygen Demand Incubation	Thermo Scientific™ Precision refrigerated incubator and the Orion Star A213 RDO/DO benchtop meter BOD kit	AquaSensor DataStick RDO/DO measurement system
Chemical Oxygen Demand Measurement	AQUAfast AQ3700 colorimeter or AquaMate 8000 UV/Vis spectrophotometer	



Thermo Scientific Orion AQUAfast AQ3010 portable turbidity meter

Shipped pre-calibrated, the turbidity meter's performance offers great stability and 0 to 2000 NTU auto-ranging. Portable and IP67 waterproof housing. Approved for ISO 7027 IR LED method for reporting turbidity in water.



Thermo Scientific AquaPro multi-input analyzer with Orion pHr Process ROSS electrode

AquaPro provides an attractive cost of ownership and versatility with up to four digital or analog sensor inputs combined with flexibility to interface with most communication protocols. The Orion Process ROSS electrode offers high stability and negligible drift combined with 90 days of operation between maintenance intervals, even in harsh applications.



Thermo Scientific Precision refrigerated incubator for BOD Testing

Ideal for applications requiring temperatures ranging from -10 to +60C, such as BOD studies. Easy to clean and corrosion resistant, the Precision refrigerated incubator is available in compact under-counter or full-size units, which hold over 300 BOD bottles. Features an efficient, dependable design with microprocessor controls and forced air circulation.

Ordering Information

STEP 1

Incoming Water

Thermo Scientific Product	Part Number
Thermo Scientific Orion Star A211 pH benchtop meter food and beverage kit	STARA2119
Thermo Scientific Orion Star A212 conductivity benchtop meter kit	STARA2125
Thermo Scientific Orion Star A214 pH/ISE benchtop meter pH kit	STARA2145
Thermo Scientific Orion Star A221 pH portable meter kit	STARA2215
Thermo Scientific Orion Star A222 conductivity portable meter kit	STARA2225
Thermo Scientific Orion 9720BNWP calcium ISE electrode	9720BNWP
Thermo Scientific Orion ROSS Sure-Flow sodium ISE electrode	8611BNWP
Thermo Scientific Orion Sure-Flow Chloride ISE electrode	9617BNWP
Thermo Scientific Orion AQUAfast AQ3700 portable colorimetry meter	AQ3700
Thermo Scientific Orion AquaMate 8000 UV-Vis spectrophotometer	AQ8000
Thermo Scientific Orion Chlorine XP water quality analyzer	CXP71
Thermo Scientific Orion 2120XP calcium hardness analyzer	2120XP
Thermo Scientific AquaSensors DataStick pH system	PH31A1A1, DS31-WA, CA32B1A, AP1XXXK
Thermo Scientific AquaSensors DataStick wide-range turbidity system	RT1241, AP1XXXK
Thermo Scientific AquaSensors DataStick conductivity system	CC31A or CC31B, DS31-WAI, CA32B1A, AP1XXXK
Thermo Scientific AquaSensors DataStick dissolved ozone measurement system	AQZ1C0

STEP 2

Beer Production and Quality Control Testing

Thermo Scientific Product	Part Number
Thermo Scientific Orion Star A211 pH benchtop meter food and beverage kit	STARA2119
Thermo Scientific Orion Star A214 pH/ISE benchtop meter pH kit	STARA2145
Thermo Scientific Orion Star A221 portable meter kit	STARA2215
Thermo Scientific Orion Star A323 RDO/DO portable meter kit	STARA3235
Thermo Scientific Orion 9165BNWP Sure-Flow pH electrode	9165BNWP
Thermo Scientific Orion ATC Probe	927007MD
Thermo Scientific Orion AQUAfast AQ3010 turbidity meter	AQ3010
Thermo Scientific Heratherm heating and drying oven, 100 L (other sizes / models available)	51028873
Thermo Scientific Heratherm microbiological incubator, 100 L (other sizes / models available)	51028064
Thermo Scientific Barnstead Smart2Pure water purification system (other models available)	50129688, 50129845, 50129887
Thermo Scientific Compact Digital Mini Rotator	88880025 (US Plug) / 88880026 (EU, UK, CN Plugs)

STEP 3

Outgoing Water

Thermo Scientific Product	Part Number
Thermo Scientific Orion Star A211 pH benchtop meter food and beverage kit	STARA2119
Thermo Scientific Orion Star A213 RDO/dissolved oxygen benchtop meter BOD kit	STARA2136
Thermo Scientific Orion Star A221 pH portable meter kit	STARA2215
Thermo Scientific Orion AquaMate 8000 UV-Vis Spectrophotometer	AQ8000
Thermo Scientific Orion AQUAfast AQ3010 portable turbidity meter	AQ3700
Thermo Scientific Precision refrigerated incubator, 566 L	PR505755R
Thermo Scientific AquaSensors DataStick suspended solids turbidity measurement system	RT2241, AP1XXXK
Thermo Scientific AquaPro multi-input analyzer	AP1XXXK
Thermo Scientific Orion pHr Process ROSS electrode	SH36A9E210
Thermo Scientific AquaSensor DataStick RDO Pro-X RDO/DO measurement system	RD6A43, AP7XXXK





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B-BEERCAP-E 0116 RevA

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