



Optimizing Ethanol Production

Trusted solutions for precision,
safety & compliance

Introduction to Ethanol Production

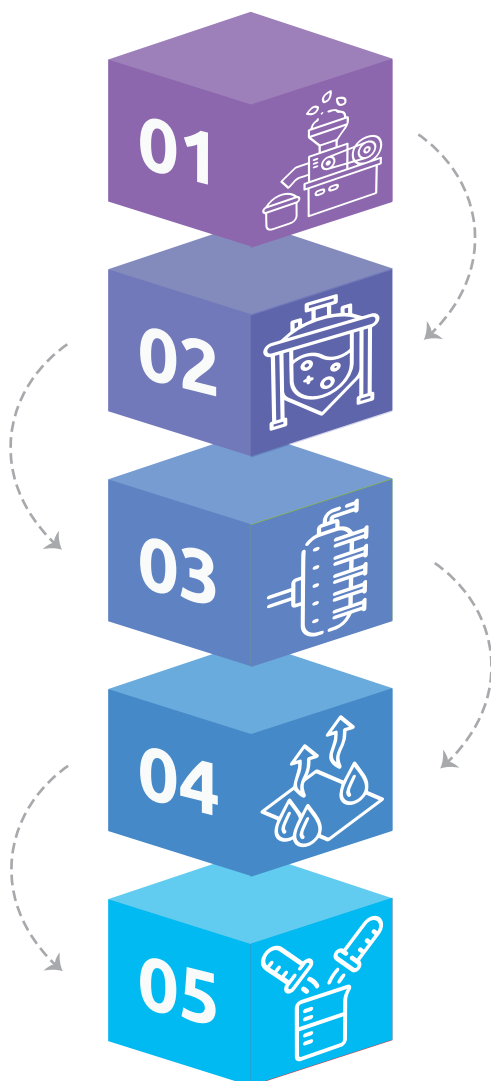
Fueling a Sustainable Future with E20

As India drives toward its E20 ethanol blending goal, ethanol producers like you stand at the heart of this transformation—powering a cleaner, greener future, strengthening rural economies, and advancing national energy self-reliance. Together, we are shaping a sustainable tomorrow by reducing carbon emissions and dependence on fossil fuels.

Borosil Scientific brings you a comprehensive suite of solutions that integrate seamlessly into your ethanol production workflow. From feedstock characterization to final ethanol quality testing and wastewater monitoring, our products help streamline processes, reduce variability, ensure regulatory compliance, and drive operational excellence.



The E20 Production Process



Steps to High-Quality Ethanol

Feedstock Preparation

Grains are milled to release fermentable sugars, the foundation for ethanol production.

Fermentation

Yeast is added to convert sugars into ethanol, typically in large fermenters, for several days.

Distillation

Ethanol is separated from the fermentation mixture via distillation, ensuring maximum alcohol purity.

Dehydration

Ethanol is purified further by removing excess water, yielding high-concentration ethanol suitable for blending with gasoline.

Blending

The final ethanol product is blended with gasoline to produce the E20 mixture, ready for use as an eco-friendly automotive fuel.

How our Offerings Enhance Ethanol Production

Feedstock Characterization



Moisture Analyzers

Halogen-powered moisture analysis for instant % moisture data—speeding up raw material checks and optimizing fermentation yields.



Kjeldahl Apparatus

Kjeldahl Apparatus (digestion + distillation units) measure Total Kjeldahl Nitrogen (TKN), helping calculate protein/nitrogen ratios in molasses, grains, or lignocellulosic biomass.



Digital Burette

Our precision Digital Burette facilitates high-accuracy titrations to assess Total Acidity, Sulfur Content, and Phosphorus Content—all key fuel-quality parameters. Our burettes minimize human error and provide reproducible results, critical for batch verification and inter-laboratory calibration.



Fat Analyzer

Fat Analyzer measures total fat to identify process inhibitors and optimize feedstock quality.



Fiber Analyzer

Fiber Analyser delivers precise fiber insights to evaluate digestibility and optimize feedstock quality..



Accurate, automated and rapid feedstock analysis for better yield, less variability.

Fermentation Process Control



Micropipettes

Dosing acids, enzymes, antifoam agents with CV < 0.6%



pH Meters

Critical pH maintenance during sugar-to-ethanol conversion.

Distillation & Final Quality Control



Water Bath

Uniform ethanol distillation at controlled temps.



Bottle Top Dispenser

Safe dispensing of corrosive reagents in QA labs



Quartz Cabinet Double Distillation

Automated, On-Demand Water Distillation — Safe, Cabineted Design Tailored for Ethanol Production.

UV-Visible Spectrophotometry (190–1100 nm Range)

Used for impurity detection and spectral scanning, our UV-Vis Spectrophotometer ensures ethanol quality by measuring absorbance at critical required wavelengths (240 nm, 250–260 nm, 270–340 nm). It helps confirm compliance with regulatory tolerances, particularly monitoring aromatic and volatile organic impurities.



During feedstock analysis, our lab glassware and spectrophotometric tools assist in measuring crude protein, fiber, and starch content—ensuring optimal feedstock selection and consistent saccharification outcomes.

Glass Burettes

Reliable titration for monitoring acidity and ethanol yield consistency



Glass Pipettes

Precise volume transfer for accurate enzyme dosing and fermentation control



Calibrated Volumetric Glassware

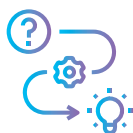
Our volumetric glassware ensures accurate preparation and measurement of solutions during ethanol production crucial for consistent fermentation and precise yield analysis. From dilutions to titrations, our glassware supports every step with reliability and repeatability, ensuring lab-to-process accuracy.



How our Offerings Enhance Ethanol Production



A Trusted Partner in Sustainable Manufacturing



End-to-end solutions under one roof.



Assured accuracy & traceability to avoid costly errors.



Made in India, trusted globally.



Fast service & technical support for ethanol plants.



Supporting your path to E20 compliance & sustainability.



Automated, fast, accurate, safe and operator-friendly solutions.



Ensures compliance, traceability, and hassle-free audits.

About Borosil Scientific

Borosil Scientific is a global leader in manufacturing high-quality glassware, laboratory instruments, pharma primary packaging and process sciences. With a commitment to innovation and excellence, Borosil provides solutions across multiple industries, including pharmaceuticals, chemicals, biofuels, and beyond.



Get in Touch with Borosil

Let's Power the Future Together


Whether you're looking to optimize an existing ethanol plant or build a new one from scratch, our advanced solutions can make all the difference. Our team is ready to assist you with customized solutions that meet your unique needs in ethanol production.

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