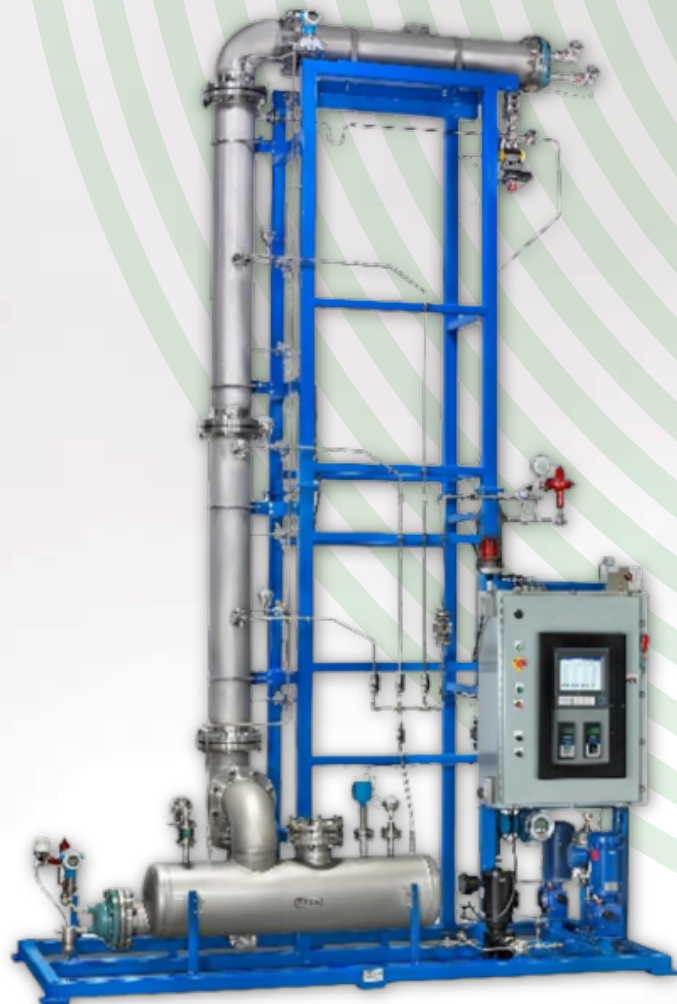




Automate | Optimize | Scale

2023 CASE STUDY

Precision Ethanol Recovery for Pharmaceutical Innovation



Industry: Pharmaceutical & Biotech

Unit Installed: Custom Fractional Distillation Column System

The Challenge

A pharmaceutical innovator needed a high-throughput ethanol recovery solution to support its biomedical production processes. Their feedstock consisted of a 90% ethanol and 10% water mixture, requiring precise separation to meet purity standards.

Key challenges included:

- Maintaining pharma-grade purity with 95% ethanol output.
- Processing over 100 gallons per hour continuously.
- Ensuring compliance with C1D2 safety standards.
- Integrating solvent management tools for tracking and weighing.

Traditional systems lacked the automation, throughput, and traceability the client required for regulated pharmaceutical operations.

The Solution

Maratek engineered and installed a custom fractional distillation column system, featuring:

- 25-ft tall packed column with 316 stainless steel construction for sanitary, pharma-grade processing.
- Automated PLC controls (Allen Bradley or Siemens) with remote access and real-time monitoring.
- Solvent management system with integrated weigh scale and tracking for compliance and inventory control.
- High-capacity throughput of ~5,000L/day (24-hour operation).
- C1D2 certification for safe operation in hazardous environments.
- Onsite installation and training with two Maratek technicians for up to 7 days, ensuring smooth startup and operator confidence.

The Result

The client achieved:

- Consistent ethanol purity at 95%, meeting stringent pharmaceutical standards.
- Operational efficiency with automated, high-volume recovery.
- Improved traceability through integrated solvent tracking and weighing.
- Regulatory confidence with C1D2-certified equipment and full documentation.
- Seamless onboarding thanks to Maratek's hands-on training and support.

Why Maratek?

With over 50 years of experience and 1,500+ systems installed, Maratek is trusted for its custom engineering, automation expertise, and industry-leading safety standards. For this client, Maratek delivered a solution that aligned with pharmaceutical-grade requirements while enabling scalable, compliant operations.

Call: 905.857.2738 | Toll Free: 1.800.667.6272 | Email: sales@maratek.com