



2024 CASE STUDY

Preserving Fragrance Integrity with High-Vacuum Ethanol Recovery

Industry: Botanical Extraction

Unit Installed: OERS-SC-350 Oil & Ethanol Recovery System
(110-gallon capacity)

The Challenge

- A biotechnology company specialising in fragrance extraction needed a solvent recovery system that could preserve the delicate aromatic compounds in their feedstock.
- Their process required ethanol recovery at temperatures below 40°C to avoid degrading the fragrance profile. Additionally, they needed a custom mixing solution for post-recovery blending with hexane, and a system that could handle high vacuum requirements with food-grade finishes.
- Traditional recovery systems couldn't meet the strict temperature and cleanliness standards, and the client needed a solution that was both precise and compliant with food safety regulations.

The Solution

Maratek installed the **OERS-SC-350, a 110-gallon ethanol recovery system** designed for high-vacuum, low-temperature operation. Key features included:

- **Dry Screw Vacuum System:** Enabled ethanol to boil below 40°C, preserving fragrance integrity.
- **Custom Pneumatic Mixer:** Activated post-recovery to blend oleoresin with hexane for downstream processing.
- **Conical Vessel Base:** Allowed efficient drainage of the hexane mixture.
- **Food-Grade Finish (34–40 RA):** Ensured compliance with CFR 21 177.2600 food safety standards.
- **Class I Division I Group D Certification:** Guaranteed safe operation in hazardous environments.

Maratek also provided on-site startup training, a clean-in-place (CIP) system, and full material traceability and weld documentation to meet the client's regulatory requirements.

The Result

- **Fragrance Integrity Maintained:** Ethanol recovery at below 40°C ensured no loss of aromatic compounds.
- **Streamlined Post-Processing:** Custom mixer and conical base simplified hexane blending and discharge.
- **Regulatory Compliance:** Full documentation and food-grade finishes met strict biotech standards.
- **Operational Confidence:** Remote access, automation, and training minimized operator burden.

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.

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