

APEKS SUPERCRITICAL

Training Class

Class Content:

Introduction to extraction, post processing and short path distillation

Instructor:

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Duration:

2 days

Description

Part 1 of this course covers CO₂ extraction theory, practice and application as well as pre- and post-processing and extraction techniques. Students are instructed in methods to create full spectrum, wax free oils.

Part 2 covers distillation theory, practice and application. Students are instructed in methods to create CBD and THC distillates. SOPs will be provided.

Expectations and Goals

To obtain a working knowledge of CO₂ extraction theory, employ the use of density to fraction oil into various components and to perform winterization, filtration and solvent recovery while learning to make full-spectrum terpene rich oil devoid of wax and lipids. Obtain a working knowledge of distillation theory and employ the use of a short path distillation apparatus to distil oils. Be able to determine when "tails" or end of a distillation is about to occur as well as recognize different fractions in the process.

Course Materials

Day 1 Required Materials:	Day 2 Required Materials:	PPE Required Materials:
Apeks CO ₂ Extraction system Rotary evaporator Ethanol Biomass (Hops) Vacuum pump Filtering flask and buchner filter Vacuum oven Bentonite (fullers earth clay) Activated carbon neutral PH	12L flask Short path condenser 500ml flasks 3-way receiver "cow" Vacuum regulator Heating mantle Dry Ice Cold trap Vacuum pump oil Vacuum pump Biomass (Hops oil)	Safety glasses (provided) Gloves (provided)

PART 1 COURSE SCHEDULE

Time	Class	Topic
9-9:30	30 min – Intro to CO ₂ extraction theory CO ₂ Phases and polar vs non-polar solvents.	Density, extraction, molecular weight Density Calculator
9:30-10	30 min – Biomass pre-processing	Grinding, Decarboxylation, fractioning, water content.
10-11	60 min – Extraction theory	Using density to fraction and selectively extract compounds. Supercritical vs Subcritical extraction. Supercritical fluid above its critical temperature (304.25 K, 31.10°C, 87.98°F) and critical pressure (72.9 atm, 7.39 MPa, 1,071 psi, 73.9 bar)
11-12	60 min – Extraction process Pt1	Loading extraction vessel, packing vessel, settings and parameters for different fractions. Terpene pulls, THCA and CO ₂ -RSO (a Full Spectrum Decarboxylated, high boiling terpene rich oil). 220f decarboxylation RSO – 1350 psi @ 89°F (medium critical)
12-12:30	30 min – Lunch break	
12:30-1:30	60 min – Extraction process Pt2	Loading extraction vessel, packing vessel, settings and parameters for different fractions. Terpene pulls, THCA and CO ₂ -RSO (a Full Spectrum Decarboxylated, high boiling terpene rich oil).
1:30-2:30	60 min – Intro to post-processing	Winterization, filtration, filter media, color remediation, solvent recovery, purging.
2:30-3:30	60 min – Post-processing demonstration	Demo of filtration types, color remediation, solvent recovery and purging of final product.
3:30-4	30 min – Vacuum oven usage	Settings and oil consistencies.

PART 2 COURSE SCHEDULE

Time	Class	Topic
9-9:30	30 min – Intro to distillation theory	Pressure, temperatures, spinner speed, fractions, laminar path vs standard receiver.
9:30-10	30 min – Identification & assembly	Identification of parts, purpose and assembly. Hands-on.
10-11	60 min – Vacuum	Vacuum regulator usage, pressures, maintaining vacuum, finding and preventing leaks.
11-12	60 min – Distillation prep and walkthrough	Loading boiling flask, assembling head on unit, settings and parameters for different fractions. Terpene separation, body and tails.
12-12:30	30 min – Lunch break	
12:30-1	30 min – Short path run setup and initial parameters	Getting system ready for distillation. Safety checks, calibration.
1-4	90 min – Distillation demonstration	Live distillation of hops extract.
Density calculator https://www.peacesoftware.de/einige/werte/co2_e.html		