



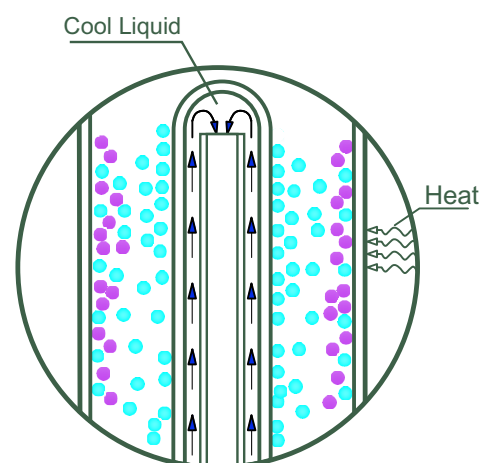
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What is Short Path (Molecular) Distillation?

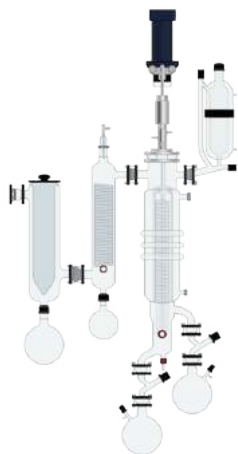
Short Path (Molecular) Distillation is a special liquid-liquid separation technology, which is different from the traditional distillation by boiling point difference separation principle, but by different substances molecular movement of the average free path difference to achieve separation.

Process of the Short Path (Molecular) Distillation

The process of Short Path (Molecular) Distillation when carried out in an apparatus designed for high vacuum in order to allow the molecules escape from the warm liquid into a cooler surface inside a condenser before coming in contact other molecules and finally settle down into the liquid is known as molecular distillation. This method is applied to purify heat sensitive, high boiling point, and high molecular weight materials.



Turnkey Package



Main distiller

- Jacketed Glass Barrel with Internal Cooling Condenser
Diameter: 60mm/80mm/100mm/150mm/200mm/230mm
Effective Evaporation Area: 0.06-0.50m²
Processing Rate: 100-25000gram/hour
- External condenser (Optional)
- Jacketed Feeding Vessel with Lid
- Distillate Receiving Flask (Optional: Continuous collection module)
- Residue Receiving Flask (Optional: Continuous collection module)
- Dry ice cold trap (Optional: Cooling coils cold trap)
- Magnetic drive rotation with motor
- Stainless steel wiper with PTFE blade



Control system

- Digital High Vacuum Gauge (0.01pa-1atm), Pirani Type
- VFD Speed Controller for Rotation Motor
- Two Temperature Controllers for Heating Tapes
- Two switches for Diffusion pump (Optional)
- Main Power switch
- Electricity: 220V



- Heating Circulator for Feeding Vessel
- Temperature Range: RT-300°C
- Electricity: 220V



- Heating Circulator for jacketed glass barrel
- Temperature Range: RT-300°C
- Electricity: 220V



- Heating/cooling Circulator for internal condenser
- Temperature Range: RT-100°C
- Electricity: 220V



- Optional
- Cooling circulator for external condenser
 - Bath volume: 10L
 - Lowest temp: -32°C
 - Pump rate: 20L/min
 - Electricity: 380V



- Optional
- Cooling circulator for coil condenser
 - Bath volume: 5L
 - Lowest temp: -23°C
 - Pump rate: 70L/min
 - Electricity: 380V

Vacuum system

- 2XZ-6 Vacuum pump
- Pumping speed: 6L/S(21.6m³/h)
- Extreme pressure: Pa
Sub pressure: ≤4*10¹
Full pressure: ≤1
- Speed: 1400r/min
- Electricity: 380V



Technical indicators

- Working temperature: 10-35°C
- Working humidity: 85%
- Power indicator: 220V, 400W
- Fan indicator: 220, 25W
- Upper doameter: KF80
- Doam, eter of lower mouth: KF25
- Pumping speed: 200L/S
- Limit pressure: 10-4Pa
- Maximum dscharge pressure: 25Pa
capacity 30ml

Working Process

Feed material is delivered from a feed flask into the main jacketed evaporator, having heating from the jacket, and a diagonally slotted wiper mechanism forcing liquid around and downward in a thin film on the inside. In the center of the body is a closely positioned internal condenser, providing a short path for vapor molecules traveling from the heated surface to the condenser surface. During the journey downward, lighter (lower boiling point) fractions of the liquid begin to vaporize, move to the internal condenser and condense, falling down as a liquid into a well that captures and separates the distilled liquid which flows into the Distillate receiving flask. Heavier residue material (like chlorophyll, salts, sugars, heavy wax) does not evaporate and instead travels the length of the main evaporator body and flows into the Residue receiving flask.

Extraction cycle

The procedures about molecular distillation extracts cannabidiol from medical hemp are as follows :

Step one : select medical hemp extractum to be used;

Step two : put extractum into feeding tank to be heated. Put liquid-phase extractum into molecular distillation by feeding pump after solid extractum is turned into liquid-phase. Distilling extractum liquid with molecular distillation. Vacuuming the molecular distillation with a vacuum pump, and control the stirring speed. Put the cooling or heating medium into the condenser in the molecular distillation at the same time.

Step three : collect cannabidiol in the collection tank 2, collect extractum residue in the collection tank 2, and pass the heat medium into the jacket of collection tank 1 and collection tank 2 at the same time which should also be heated to keep the temperature.

Step four : heat the cold medium in cold trap. A small amount of tetrahydrocannabinol and solvent are obtained in the collection tank 3.

Step five : put extractum into feeding tank when the extractum almost runs out, and end the working process until the extractum runs out.

1)

According to the procedures about molecular distillation extracts cannabidiol from medical hemp noted by 1, its characteristic is the heating temperature of noted extractum in feeding tank is 50~90C° in the step2.

2)

According to the procedures about molecular distillation extracts cannabidiol from medical hemp noted by 1, its characteristic is the heating temperature of noted extractum in molecular distillation is 80~200C° in the step2.

3)

According to the procedures about molecular distillation extracts cannabidiol from medical hemp noted by 1, its characteristic is the vacuum degree of molecular distillation is 0.001Pa~2000Pa in the step2.

4)

According to the procedures about molecular distillation extracts cannabidiol from medical hemp noted by 1, its characteristic is the heating temperature of molecular distillation is 100~250C° in the step3.

5)

According to the procedures about molecular distillation extracts cannabidiol from medical hemp noted by 1, its characteristic is the linear speed of scraping wall of molecular distillation is 0.1~1m/s in the step2.

