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TOPTION INSTRUMENT CO.,LTD



Molecular Distillation One Stop Solution

Quality Manufacturing 15 Years

TOPTION INSTRUMENT Co., Ltd., has spent many years becoming a world leading lab solution provider, supply the best solutions and products for our global customers. Excellent quality, advanced technology, and professional service are crucial for making lab research and production successful.

Since 2004 TOPTION'S equipment has been used and praised in many counties including Canada, United States, Poland, and Spain. Our stainless steel, high precision molecular distillation equipment currently services more than 85% of the market share in the cannabis industry.

TOPTION has passed ISO9001 & CE certification. Choose TOPTION to maximize your results. We believe, TOPTION will be your TOP OPTION.

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Molecular distillation equipment

Short path (molecular) distillation system is considered as the safest mode of separation and to purify the thermally unstable molecules & related compounds with low volatility & elevated boiling point. In the high vacuum environment, molecular distillation has the advantages of low distillation temperature, short heating time and rapid separation.

A complete molecular distillation plant should include

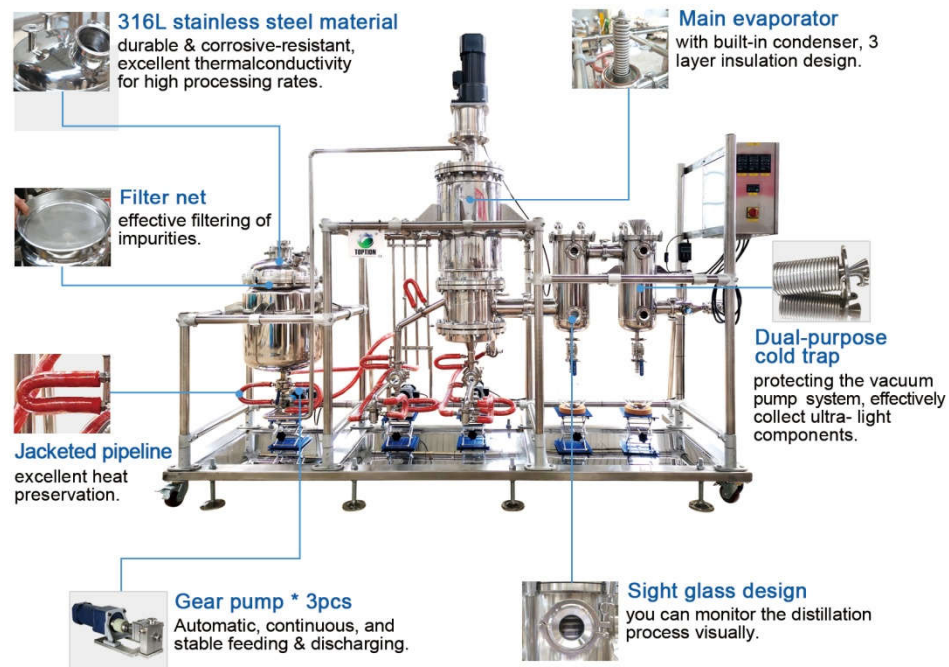
| | |
|--------------------------|--|
| Short path evaporator | Heating system (RT-200°C or RT-300°C) |
| Material charging system | Cooling system (-20°C~180°C or -40°C~RT or -80°C~RT) |
| Material collection unit | Vacuum system (0.05pa / 1pa / 10pa) |

Product parameters

| Model | Evaporator Area (㎡) | Internal Condenser Area (㎡) | Capacity (L/h) | Mixing Motor Power (W) | External condenser + Cold trap |
|---------|---------------------|-----------------------------|----------------|------------------------|--------------------------------|
| MDS-10 | 0.10 (5 Inch) | 0.15 | 3-15 | 370W | 1+1 |
| MDS-20 | 0.20 (7 Inch) | 0.40 | 5-25 | 370W | 1+1 |
| MDS-30 | 0.30 (8 Inch) | 0.50 | 5-30 | 550W | 1+1 |
| MDS-50 | 0.50 (12 Inch) | 2.00 | 10-50 | 1500W | 1+1 |
| MDS-100 | 1.00 (14 Inch) | 3.00 | 30-200 | 3000W | 1+1 |
| MDS-200 | 2.00 (20 Inch) | 5.00 | 30-260 | 3000W | 1+1 |
| MDS-500 | 5.00 (32 Inch) | 10.00 | 50-300 | 4000W | 1+1 |

(MDS-10~50 For Research, MDS-100 / 200 / 500 for production.)

Different Types Optional



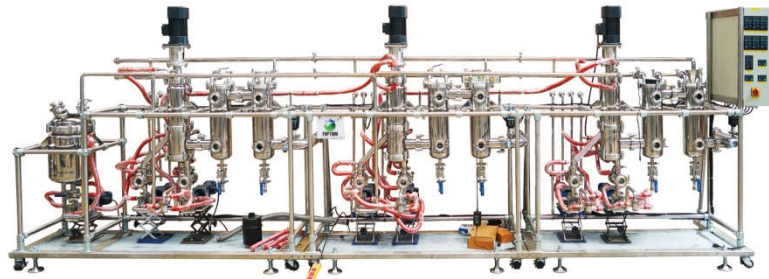
"C"(E) Series

- Jacketed Stainless Steel Material Feeding Tank.
- Gear Pump Material Feeding Type.
- Gear Pump Collection Type.



MDS-10CE

MDS-10CE Two stages type



MDS-10CE Three stages type



MDS-30CE



MDS-50CE



MDS-100CE



MDS-200CE Industry types customize

Heating System & Cooling System

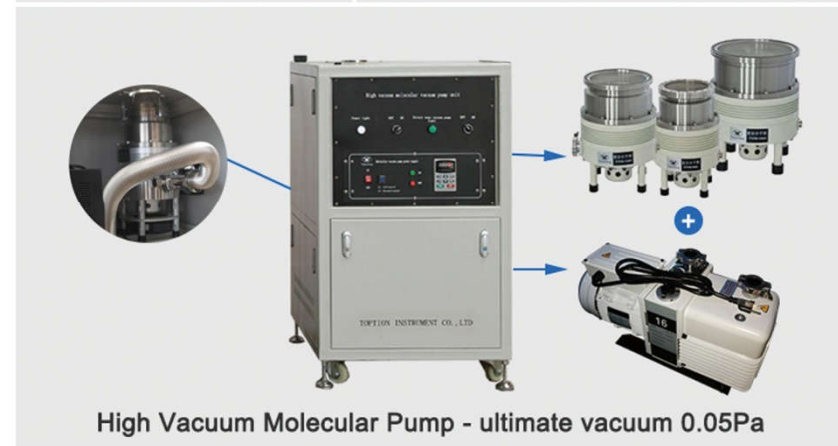


Vacuum System-ultimate vacuum 10Pa,1Pa,0.05Pa



Oil Pump - ultimate vacuum 10Pa

Roots Pump Set - ultimate vacuum 1Pa



High Vacuum Molecular Pump - ultimate vacuum 0.05Pa

Product Analysis



- | | |
|---|---|
| 1 | 316L stainless steel material:durable & corrosive-resistant, excellent thermalconductivity for high processing rates. |
| 2 | Filter net:effective filtering of impurities. |
| 3 | Jacketed pipeline:excellent heat preservation. |
| 4 | Full jacketed pipe(feeding and collection section) |
| 5 | Electric machinery:Magnetic sealing strong motor to drive rotation |
| 6 | Main evaporator:with built-in condenser, 3 layer insulation design |
| 7 | Material charging pump:Automatic, continuous, and stable feeding & discharging. |

Delicate details

316L stainless steel

Made by food grade 316L stainless steel, durable and corrosive-resistant, wit excellent thermal conductivity for high processing rates.



Filter net

effective filtering of impurities.



Wide options

Wide choices of sizes applicable to lab, pilot and industry production.



Fully jacketed

Fully jacketed design can make full insulation of whole system with circulating hot oil for precise control of insulation temperature.



Fully automatic

Fully automatic operation by feeding and collection pumps, make continuous and high efficient working process.



Shorteset lead time

Shortest lead time and inventory available, strong technical support including on-line and on-site.



Turnkey solution provided

Turnkey solution provided, including main distiller, supporting thermostatic equipment and vacuum pumps for one stop service.



Heating & cooling circulator bath

Vacuum System ultimate vacuum 10Pa, 1Pa, 0.05Pa

Application of molecular distillation equipment

Molecular distillation is applied for creating a high value clear distillate from Plant Oil Concentrates, such as refine cannabis and hemp concentrates into a golden clear distillate that can be infused into a variety of edible products or fine oils to be used in vape cartridges or other products.



Choose TOPTION to maximize your results. We believe, TOPTION will be your TOP OPTION

- 15 Years quality manufacturing - reliable quality guarantee
- 24 Years experience chemical engineers team-professional
- 85% market share in CBD industry - Maximize your returns
- Fast response technical support team & sales team
- Our engineers to your facility for installation/training is available
- Factory visit before delivery, installation & commissioning training
- Strong production capacity to promise the qualified products &
- Experienced sales with technical team standing by for aftersales

Focus on detail reliable quality



More than 15 years manufacturing experience

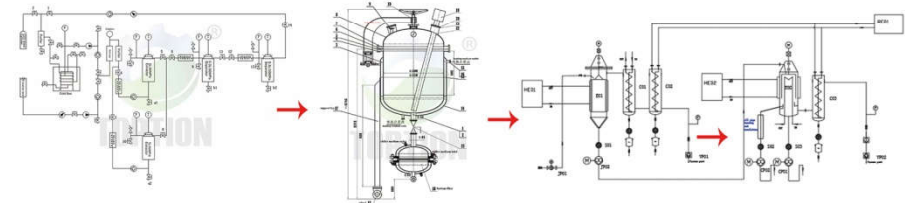


Extraction → Dewaxing / Filtration → Concentration → Separation

As plant ingredients contain a large amount of waxy, cellulose and other substances, different extraction methods will produce out different extraction capacity, because the extracted ingredients contains active ingredients, waxy and fiber, etc, so firstly need dewaxing, filtration, then through fine concentration, finally separate out the active ingredients you want, according to this process could achieve higher production requirement.

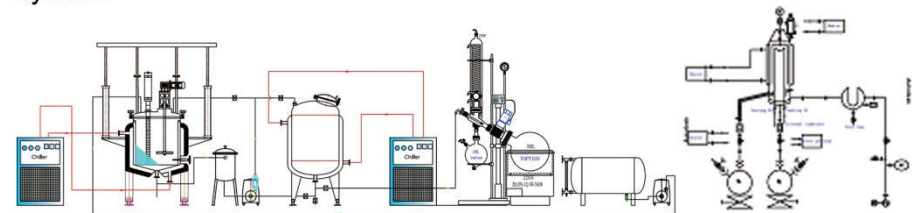
Supercritical Extraction

Supercritical extraction – dewaxing filtration system – concentration (suggest use scraped film equipment / rotary evaporator) – molecular distillation system.



Solvent Extraction Method – Ultrasonic Extraction

Ultrasonic extraction – Multi union bag-type filter - Alcohol recovery – Scraper concentration / rotary evaporator concentration – molecular distillation system.



Supercritical CO₂ extraction machine

CO₂ extraction is a method that uses CO₂ at a specified pressure & temperature to extract oils within the plant without the use of toxic solvents.



Advantage Description

- Supercritical CO₂ extracts different molecules from the plant as it is pushed through the machine.
- Unlike other solvents, once CO₂ becomes a gas, it leaves no residue and does not change the chemical composition of the oil, making the process highly effective.
- Another benefit of CO₂ extraction is that it is a scalable process. By scaling the pumps, heat exchangers, process piping, and the fraction collectors appropriately, whether the machine contains a 18L or 1650L extraction vessel, the solvent to feed ratio can be kept and achieve 90+% extraction efficiency in as little as two hours.

Application



Technical parameter

| Model | Extract Capacity | Pressure | Temperature range | Combining Form |
|----------------|------------------|----------|-------------------|--|
| TOP120-50-0.5 | 0.5L | 500bar | RT-75°C | One extracting pot-two separating pot circulation mode |
| TOP121-50-0.5 | 0.5L | 500bar | RT-75°C | One extracting pot-two separating pot one rectifying column circulation mode |
| TOP120-50-01 | 1L | 500bar | RT-75°C | One extracting pot-two separating pot circulation mode |
| TOP121-50-01 | 1L | 500bar | RT-75°C | One extracting pot-two separating pot one rectifying column circulation mode |
| TOP120-50-02 | 2L | 500bar | RT-75°C | One extracting pot-two separating pot circulation mode |
| TOP121-50-02 | 2L | 500bar | RT-75°C | One extracting pot-two separating pot one rectifying column circulation mode |
| TOP120-50-05 | 5L | 500bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP121-50-05 | 5L | 500bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP220-50-06 | (5+1)L | 500bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP221-50-06 | (5+1)L | 500bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP220-40-11 | (10+1)L | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP221-40-11 | (10+1)L | 400bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP220-40-20 | (10+10)L | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP221-40-20 | (10+10)L | 400bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP120-40-24 | 24L | 400bar | RT-75°C | One extracting pot-two separating pot circulation mode |
| TOP121-40-24 | 24L | 400bar | RT-75°C | One extracting pot-two separating pot one rectifying column circulation mode |
| TOP220-40-48 | 24L×2 | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP321-40-72 | 24L×3 | 400bar | RT-75°C | Three extracting pot-two separating pot one rectifying column circulation mode |
| TOP420-40-96 | 24L×4 | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP421-40-96 | 24L×4 | 400bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP220-40-100 | 50L×2 | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP221-40-100 | 50L×2 | 400bar | RT-75°C | Two extracting pot-two separating pot one rectifying column circulation mode |
| TOP320-40-150 | 50L×3 | 400bar | RT-75°C | Three extracting pot-two separating pot circulation mode |
| TOP420-40-200 | 50L×4 | 400bar | RT-75°C | Four extracting pot-two separating pot circulation mode |
| TOP220-40-200 | 100L×2 | 400bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP630-40-300 | 50L×6 | 400bar | RT-75°C | Six extracting pot-three separating pot circulation mode |
| TOP320-35-300 | 100L×3 | 350bar | RT-75°C | Three extracting pot-two separating pot circulation mode |
| TOP320-35-600 | 200L×3 | 350bar | RT-75°C | Three extracting pot-two separating pot circulation mode |
| TOP220-35-600 | 300L×2 | 350bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP220-35-1000 | 500L×2 | 350bar | RT-75°C | Two extracting pot-two separating pot circulation mode |
| TOP220-35-2000 | 1000L×2 | 350bar | RT-75°C | Two extracting pot-two separating pot circulation mode |

Note

- 1) Standard configuration: PID digital display and the PID control module, pressure regulation: manual back pressure valve adjustment.
- 2) Can be combined and customized according to user's special process requirement.

Dewaxing/Filtration to remove impurity



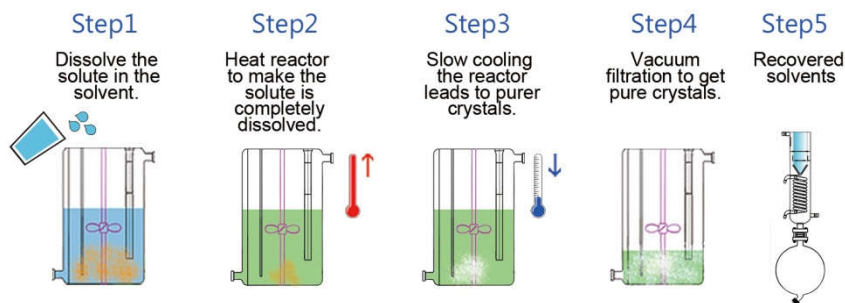
Recrystallization Vacuum Filtration



Dewaxing filter

Recrystallization is not generally thought of as a separation technique, rather, it is a purification technique in which a small amount of an impurity is removed from a compound. However, if the solubility properties of two compounds are sufficiently different, recrystallization can be used to separate them, even if they are present in nearly equal amounts. Recrystallization works best when most impurities have already been removed by another method, such as extraction or column chromatography.

Working process



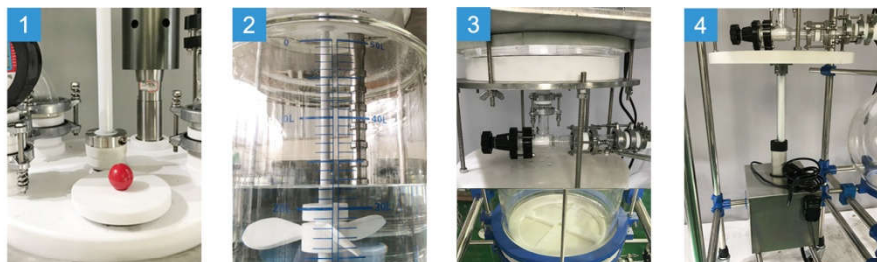
Product Analysis



| | | | |
|----|--|----|-----------------------------------|
| 1 | Condenser | 2 | Stirring motor |
| 3 | Collection flask | 4 | Discharging valve |
| 5 | PTFE stirring paddle | 6 | Sand core filter plate |
| 7 | Strong stainless steel frame | 8 | Vacuum Pump |
| 9 | Ultrasonic homogenizer | 10 | Filtration reactor controller |
| 11 | Ultrasonic controller | 12 | Collection flask |
| 13 | Condenser + collection flask, recycle organic reagents, and protect vacuum pumps | | |
| 14 | Universal wheel convenient moving | 15 | Heating & Cooling Circulator Bath |

Main features

- 1. Reactor cover port customize** - convenient & easy to do liquid/solid feeding, stirring, temperature & phmeasure, etc.
- 2. Ultrasonic emulsification with PTFE agitator** - sample mixing is more complete, better separation of materials.
- 3. Sand core filter plate with PTFE fixing gland** - fast flow, good chemical corrosion resistance & sealing performance.
- 4. Electric lift device** - filter plate can be disassembled & washed easily.



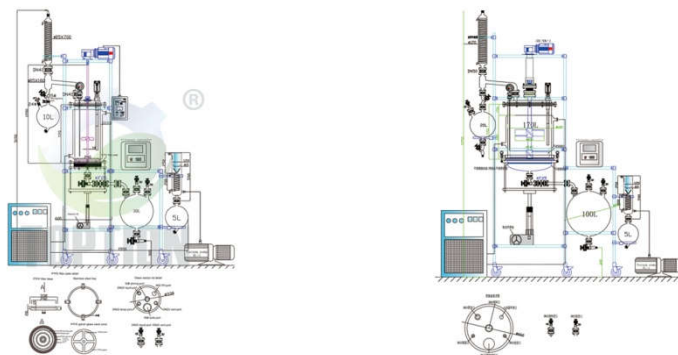
5. Cold trap & collection flask - recycle organic reagents, protect vacuum pumps.

6. Heating and cooling circulator bath (-80°C~ 250°C) - accurate temperature control according to customer's process requirements.

7. Vacuum pump is optional to make your research more efficient.



8. Lab - Pilot - Industry design



50L wax removal filtration equipment



TOPTION filtration equipment enables high throughput wax removal from winterized ethanol solutions, which is professional designed for our particular customers who are work in plant oil extraction industry.

Product analysis



Concentration recycling ethanol

- Wiped Film Evaporator – Solvent Removing High Efficient Type



1m₂
(Wiped film evaporator)



2m₂
(Wiped film evaporator)

Technical parameter

| Model | Evaporator Area(m ²) | Height (mm) | Capacity (L/H) |
|-----------|----------------------------------|-------------|----------------|
| PWFS -0.1 | 0.1 | 2300 | 2-10 |
| PWFS -0.2 | 0.2 | 2500 | 10-20 |
| PWFS -0.3 | 0.3 | 2700 | 15-30 |
| PWFS -0.5 | 0.5 | 3300 | 20-50 |
| PWFS -1.0 | 1.0 | 4300 | 50-100 |
| PWFS -2.0 | 2.0 | 4600 | 100-200 |
| PWFS -3.0 | 3.0 | 5400 | 100-300 |
| PWFS -5.0 | 5.0 | 6400 | 150-405 |
| PWFS -6.0 | 6.0 | 7200 | 180-550 |

- Rotary Evaporator - Solvent Removing Economical Type



(1L 2L 5L 10L 20L 50L 100L Easily scalable)

Rotary evaporator is mainly used in pharmaceutical, chemistry and bio-pharmaceuticals industries, for concentration, crystallization, drying, separation and solvent recovery.

Technical parameter

| Model | Rotating bottle capacity (L) | Collecting bottle capacity (L) | Temperature (°C) | Lifting method | Heating power |
|-----------|------------------------------|--------------------------------|------------------|----------------|---------------|
| RE-52AA | 0.5L | 0.5L | RT-99±0.2 | Electric lift | 1.1KW |
| RE-2000A | 2L | 1L | RT-99±0.2 | Electric lift | 1.5KW |
| RE-5000A | 5L | 3L | RT-99±0.2 | Electric lift | 2.2KW |
| RE-5210A | 10L | 5L | RT-99 (170) ±0.2 | Electric lift | 3KW |
| RE-5220A | 20L | 10L+3L | RT-99 (170) ±0.2 | Electric lift | 5KW |
| RE-5230A | 30L | 10L+10L | RT-99 (170) ±0.2 | Electric lift | 5KW |
| RE-5250A | 50L | 20L+10L | RT-99(170) ±0.2 | Electric lift | 7KW |
| RE-52100A | 100L | 50L+10L | RT-99 (170) ±0.2 | Electric lift | 16KW |

Advantage description of 50L

01 Large LCD display temp & rotating speed.

Automatic lifting, heating switch conveniently.



02 Check valve

Built-in automatic check valve, for better vacuum degree and good continuously operation.



03 Combination Valve

Gas guide flask unique PTFE combination valve, can control air flow and liquid flow based on your actual needs, material charging & discharging could be finished during rotary evaporator working, you don't need to stop rotavapor, make your research more efficient, and achieve more better organic corrosion resistance.



04 Anti-corrosion & Wearable sealing system

Specially designed and precisely manufactured. Enable system ultimate vacuum rate reaching 1000Pa (equipped with different type vacuum pump), 90% users don't need to replace rotary seal in one year.



05 PTFE Suction outlet



06 Collect bottles

Good sealability, customization is available.



07

All sealing adopt PTFE, FFKM material, after special processing, enhance sealing performance, corrosion resistance and abrasive resistance.



08

Ex-plosion proof function customize



100L Rotary Evaporator:



- 1. Condenser
- 2. Recovery Bottle
- 3. Material discharging valve
- 4. Rotating Bottle Clamp Nut
- 5. Mechanical seal for excellent sealing
- 6. Glass Rotating Bottle
- 7. Explosion proof control panel
- 8. Water Bath
- 9. Cardan wheel

Product Display

Technical support & professional customize



Wearable sealing

High efficient condenser

Ex-proof control Panel



Positive



Side



Side



Back

