TOPTION

15+years Manufacturing
Quality is our culture!

0086-29-88763980

info@toptionlab.com

GaoXin District,XI'AN CHINA

www.topdistillation.com

TOPTION INSTRUMENT CO.,LTD

TOPTION

CBD Extraction | Distillation Turnkey Solution

Quality Manufacturing 15 Years

TOPTION INSTRUMENT Co., Ltd. has spent 15+ years becoming a world leading manufacturer engaged in the research, development, production, sale and service of ethanol extraction centrifuge,molecular distillation equipment, wiped film evaporator, crystallization reactor,dewaxing / winterization filter, nutsche filter, rotary evaporator.

Since 2004 TOPTION'S equipment has been used and praised in many counties including United States, Canada, Poland, Spain, Italy, Sweden, Switzerland, Colombia. We are your dependable partner in cbd oil distillation industry, we are flexible, intelligent, and truly care about your benefits potential of a well-orchestrated vacuum distillation system. We want your cbd business brand to be remembered and welcomed by your customers, not the practicalities of cannabis market.

TOPTION has passed ISO9001 & CE certification, UL certification is in process, we work closely with our clients to deliver a successful and extraordinary cbd distillation system, choose TOPTION to maximize your benefits. TOPTION will be your TOP OPTION.

Turnkey Solution

CBD Extraction | Distillation Turnkey Solution

UL configurations

Storage Tank → Extraction (1) → Storage Tank → Filtration (2) → Storage Tank

Evaporation (3) → Decarboxylation (4) → Distillation (5) → Crystallization (6) → Drying (7)

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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

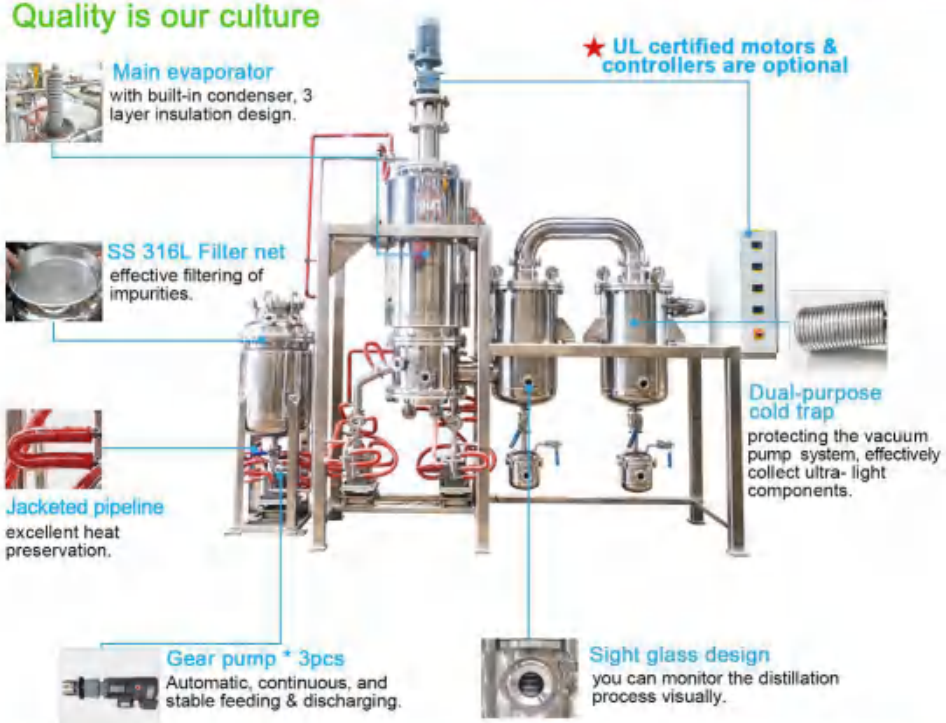
Short path evaporator	Heating system (RT-200℃ or RT-300℃)
Material feeding pump	Cooling system (-20℃~180℃ or -40℃~RT or -80℃~RT)
Material discharing pump	Vacuum system (0.05pa / 1pa / 10pa)

Product parameters (Lab-Pilot-Industry wide capacity range)

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.)

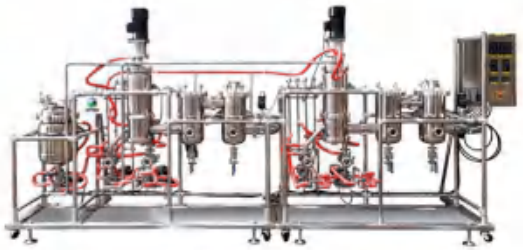
Quality is our culture



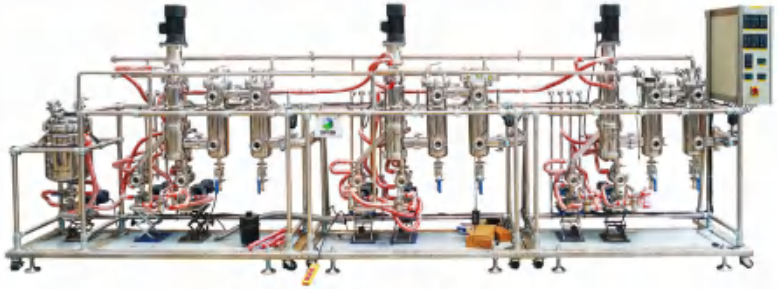
"C"(E) Series

- **UL certified motor & controller are optional.**
- Jacketed Stainless Steel Material Feeding Tank.
- Gear Pump Material Feeding Type.
- Gear Pump Collection Type.

MDS-10CE



MDS-30CE Two stages type



MDS-10CE Three stages type

MDS-30CE

MDS-50CE

MDS-100CE

MDS-200CE Industry types customize

Distillation clean & clear cbd oil

Heating System & Cooling System

Vacuum System-ultimate vacuum 10Pa,1Pa,0.05Pa
(UL certified pumps are optional)

Oil Pump - ultimate vacuum 10Pa

Roots Pump Set - ultimate vacuum 1Pa

High Vacuum Molecular Pump - ultimate vacuum 0.05Pa

Product Analysis

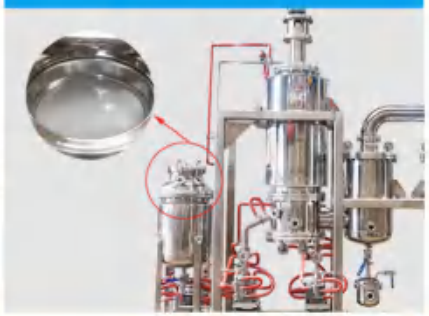
1	316L stainless steel material:durable & corrosive-resistant, excellent thermalconductivity for high processing rates.
2	Filter net:effective filtering of impurities.
3	Jacketed pipeline:excellent heat preservation.
4	Full jacketed pipe(feeding and collection section)
5	Electric machinery:Magnetic sealing 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.
8	High Efficient External Condenser

Distillation clean & clear cbd oil

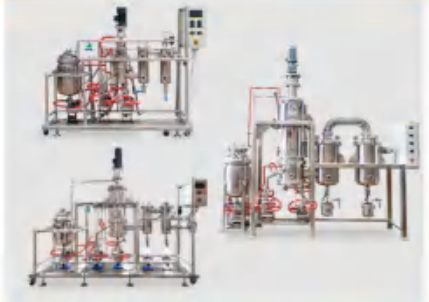
Delicate details

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.

Customer case

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 customize	Large 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 & on-time delivery	Experienced sales with technical team standing by for aftersales support

Distillation clean & clear cbd oil

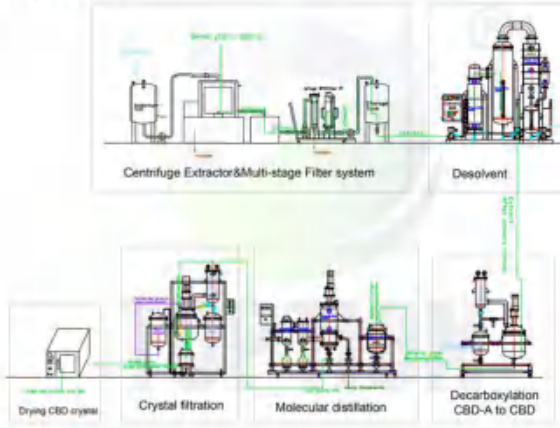
Focus on detail reliable quality

More than 15 years manufacturing experience

Distillation clean & clear cbd oil

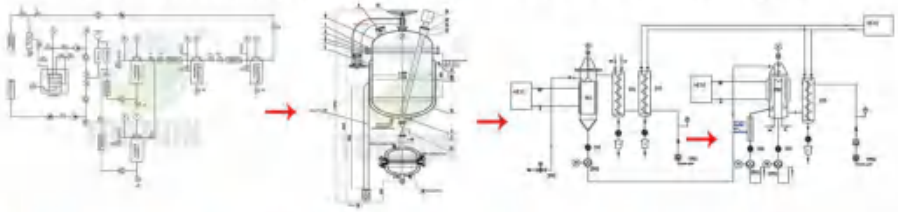
1.Cryogenic centrifugal extraction

Cryogenic centrifugal extraction - Remove reagent - Decarburization tank - Molecular distillation.



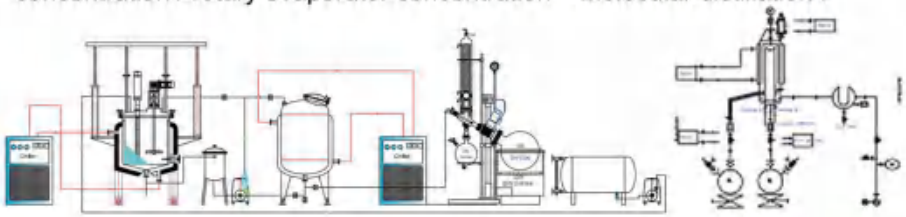
2.Supercritical Extraction

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



3.Solvent Extraction Method – Ultrasonic Extraction

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



Centrifuge cbd extraction

Integrated explosion -proof control cabinet.

EX external split PLC operation to meet higher explosion-proof.

TOPTION TOP-C series ethanol extraction centrifuge has a high degree of automation, large processing capacity, convenient operation and maintenance, and can realize remote control. Its special structure allows the working temperature to be as low as -80℃, prevents the volatilization of ethanol, and improves production efficiency.

15lbs~220lbs
Of biomass/batch

98%
Extraction rate from biomass

97%
Ethanol removal

Technical parameter

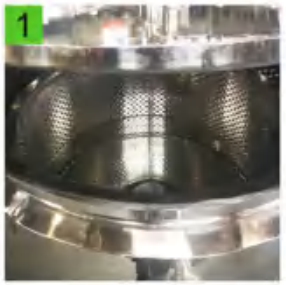
Main parameters	TOP-C15	TOP-C30	TOP-C50	TOP-C110	TOP-C160	TOP-C220
Vessel diameter(inch)	12	18	24	32	40	47
Vessel volume(L)	18	48	110	251	393	565
Biomass/batch (lbs)	15	30	50	110	160	220
Alcohol solvent (L)	57	110	201	377	546	745
Standard Max speed(r/min)	3000	2000	1500	1000	900	700
Optional 1:speed	4000	3000	2000	1500	1200	1000
Main motor power (kw)	2.2/3	3/4	5.5/7.5	7.5/11	11.0/15	18.5/22
Vessel load-bearing (lbs)	25	50	100	320	450	540
Dimension (L*W*H)mm	850*610 *900	980*680 *1000	1350*990 *1300	1700*1200 *1500	1970*1400 *1500	2200*1700 *1500
Machine weight(kg)	≈300	≈500	≈800	≈1400	≈1900	≈2500

TOP Series cbd extraction centrifuge advantages

1. **Mechanical spring** - to help the operator easily open the cover.

2. **Siemens** - PLC control system & operation screen.

3. **UL inverter optional** - Variable speed governor for stepless speed regulation of centrifuges.



4. Level gauge - check if the amount of alcohol soak is enough at any time.

5. Nitrogen protection device - using nitrogen for "inert environmental protection"

6. Drum welds - Drum welds are 100% non-destructive inspection,strict dynamic balance test. No stiffeners, reducing sanitary dead angles, easy to clean, low running noise.

4

5

6

7. UL / EN - CE certified electrical appliances,UL / EN standards

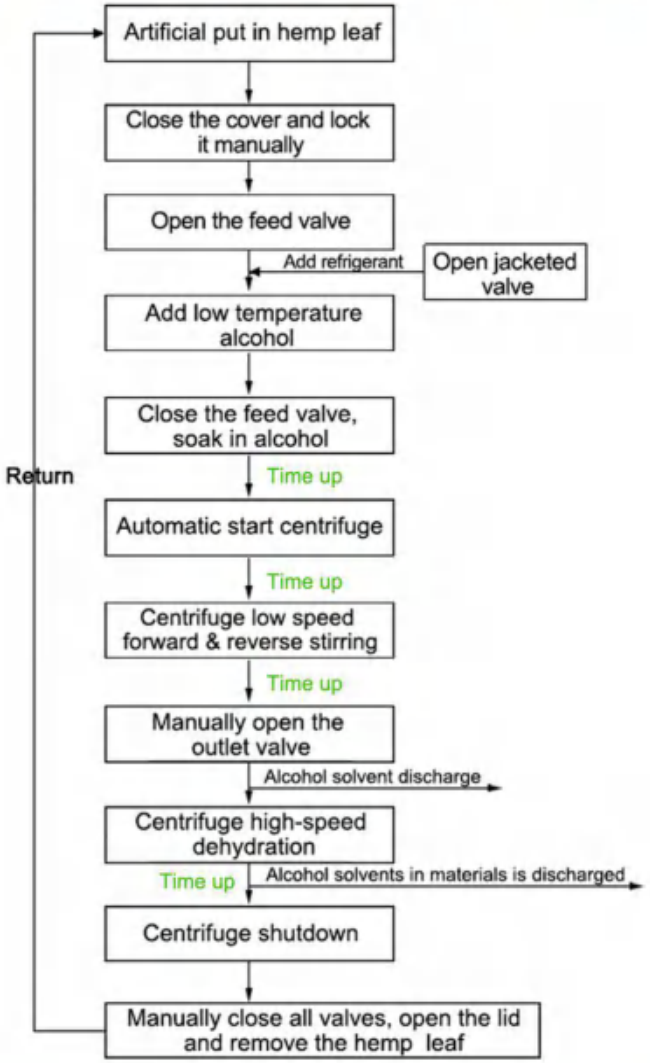
7

8. Storage tank, -80℃ Chiller- standards available..

8

Work Process

Centrifuge alcohol extraction process flow chart



Multistage bag filter

TOPTION bag & cartridge filter system is specifically used for deep fine filtration of plants crude oil after centrifugal extraction. The modular closed system has effectively solved Difficulties in the filtering process.

Product analysis

- This stacked filter system consists of three parts: a centrifugal pump, a bag filter, and a precision cartridge filter.

F120 bag & care filter system

Technical parameters

Name	Inside the container
Design pressure (MPa)	0.8
Working pressure (MPa)	0.5
Operating temperature (℃)	80
Weld coefficient	0.85

Structure design

1.Integral stainless steel platform with moving wheels.

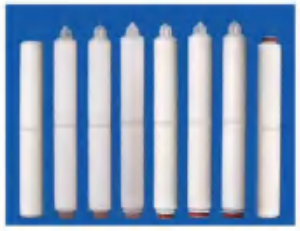
2.Side entry structure for bag filter, bottom-in, bottom-out for cartridge filter.

3.Multi-stage filter element increases the filtering effect.

4.The quick-open design of the pipe fitting valve, the complete system design has a pressure gauge port, an exhaust valve port, a discharge valve, etc., which is convenient to operate and easy to clean.

5.Centrifugal pump, suitable for conveying suspension, its structure is simple and compact. For the same delivery volume, the centrifugal pump occupies a small area, is lightweight, and consumes less material.

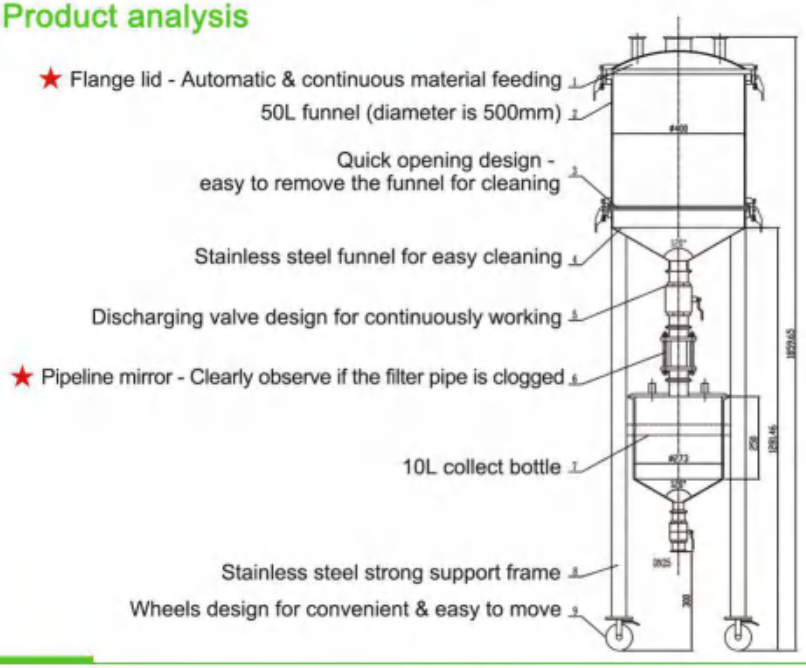
6.The filter is free of cleaning, and the replacement of the liquid filter bag or filter element can be completed in 30 seconds, which is convenient and fast, saving labor and time.



50L/100L/200L 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



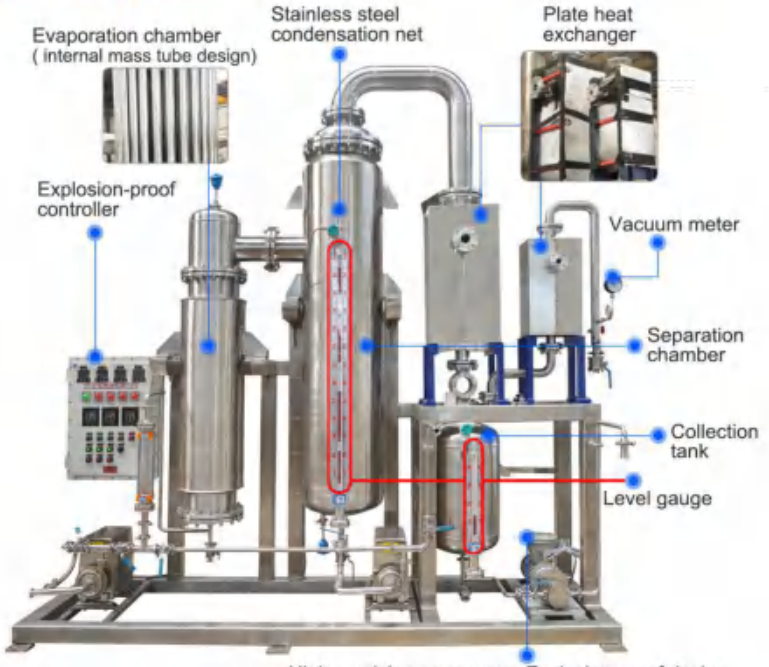
Rising Film Evaporator

- Fast evaporation
- Higher solvent collection rate
- Smaller dimension

Technical parameters

Model	RFE-200L	RFE-400L
Evaporator	5㎡	10㎡
Evaporation chamber	Φ400	Φ500
Condenser	15㎡	20㎡
Condenser	5㎡	10㎡
Storage tank	100L	200L
feeding pump	100~260L/H	100~500L/H
Discharge pump 1	100~260L/H	100~500L/H
Discharge pump 2	100~260L/H	100~400L/H
L*W*H	3500*1000*3400mm	3700*1000*3600mm

Product analysis



Delicate details

01 Continuous evaporation process & safe operation

High precision gear pump for automatic | stable | continuously material feeding / discharging

Explosion-proof controller

02 Rising film evaporator

for Fast evaporation, use smaller equipment to produce more products.

Stainless steel condensing net

improves product purity, and reduces heavy component waste.

04 Minimize solvent waste

Plate heat exchanger.

05 Liquid level transmitter design

the solvent can be continuously & automatically output, and the distilled solvent is discharged without stopping the operation.

06 Discharge/Reflux pump design

If the residual solvent does not meet the requirements after the first evaporation, the evaporation can be recycled.

07 Sight Glass

Process visibility with unique sight glass.

Concentration recycling ethanol

• Wiped Film Evaporator – Solvent Removing High Efficient Type

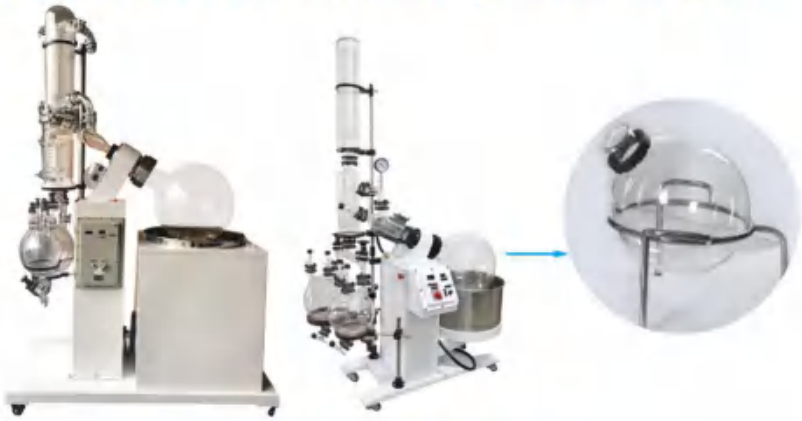
1m2
(Wiped film evaporator)

2m2
(Wiped film evaporator)

Technical parameter

Model	Evaporator Area(㎡)	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)

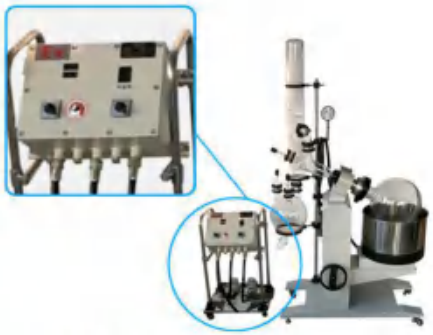
Rotary evaporator is mainly used in pharmaceutical, chemistry and bio-pharmaceuticals industries, for concentration, crystallization, drying, separation and solvent recovery.

Technical parameter

Model	Rotating bottle capacity (L)	Collecting bottle capacity (L)	Temperange (°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

Ex-plosion proof function customize

★ 1.Explosion-proof & rotovapor integrated type



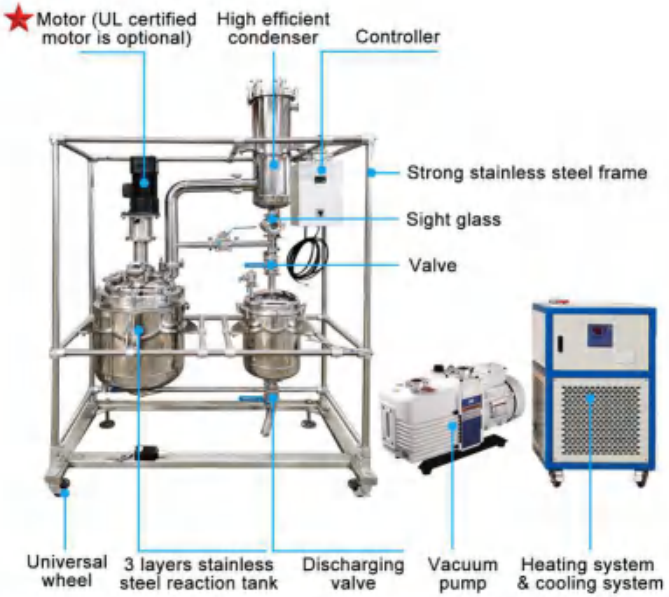
★ 2.External explosion-proof box

Technical support & flexible design

Decarboxylation

Convert CBD-A into CBD

Product analysis



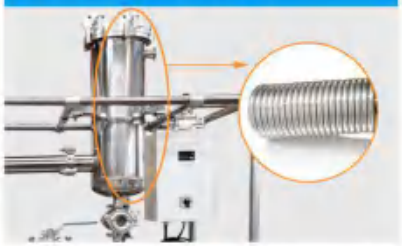
Technical parameter

Model	TDC-50L	TDC-100L	TDC-200L
Reactor volume	50L	100L	200L
Stirring power	0.75Kw	1.5Kw	1.5Kw
Condenser area	1㎡	2㎡	3㎡
Receiving tank	30L	50L	100L
Control system	ABB	ABB	ABB
L*W*H	1380*750*2400mm	1900*950*2850mm	2250*1050*3100mm

Delicate details

01 Three layers reaction vesseldesign for better insulation effect.

02 Larger condenser area for improved recovery.



03 All parts in contact with the material are SS316L (food grade).

04 With sight glass for easy real-time observation of samples.

05 Design of return valve, could achieve reflow easily, simplify operation steps & increase efficiency.

06 6.(1)Stainless steel material no dead angle of discharge valve.
(2)Stainless steel bracket to ensure sufficient load capacity.

(1)

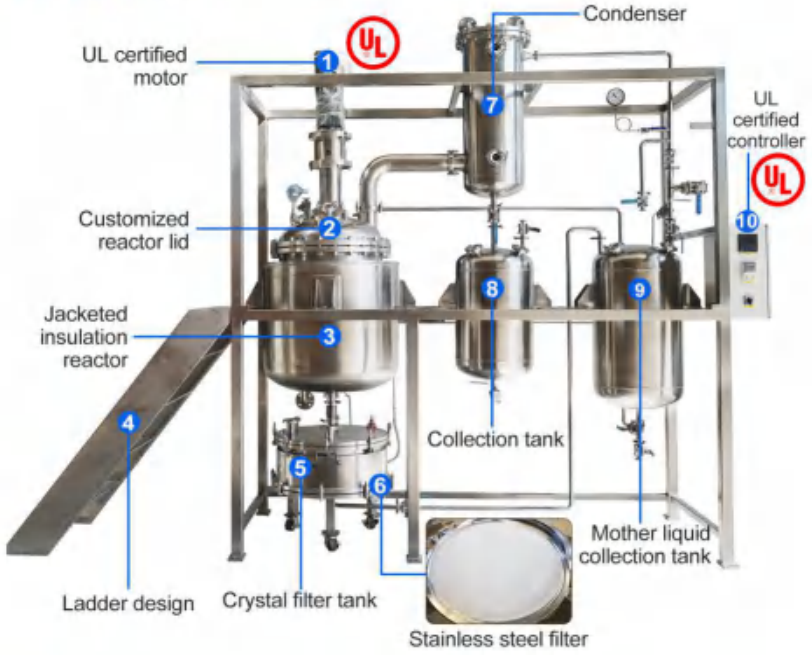
(2)

07 Machinery Seal - Sealed state is stable during long cycle operation.

08 Reliable chiller, heater, vacuum pump is available.

Crystallization/Filtration to remove impurity

Product analysis



Crystallization 99% purity cbd crystals

Technical parameter

Model	TCFR-50L	TCFR-100L	TCFR-200L
Stirred tank	Net volume 50L	Net volume 100L	Net volume 200L
	Stainless steel 304		
	agnetic drive, static sealing		
	Stirring power 750KW, frequency conversion speed regulation		
	Install pressure gauges and thermometersacket		
	1 feed port, interface KF16,and 1 ball valve	1 feed port, interface KF25, and 1 ball valve	
	1 gas protection port, interface KF16, with 1 ball valve	1 gas protection port, interface KF25, with 1 ball valve	
	Jacket import and export DN25		
Condenser	Heat exchange area 1㎡	Heat exchange area 2㎡	Heat exchange area 3㎡
	Stainless steel S304 material		
	Refrigerant inlet and outlet DN20		
Solvent tank	Volume 30L	Volume 50L	Volume 100L
	Stainless steel S304		
	Sight glass design		
Mother liquor tank	Volume 30L	Volume 80L	Volume 150L
	Stainless steel S304		
	Sight glass design		
Filter	Φ400×200(25L)	Φ500×200(40L)	Φ600×220(60L)
	50 micron filter plate + Filter cloth		
	Vacuum insulation		
Electrical box	Explosion proof design		
L*W*H	1800*750*2400mm	2100*950*2900mm	2650*1050*3100mm

Delicate details

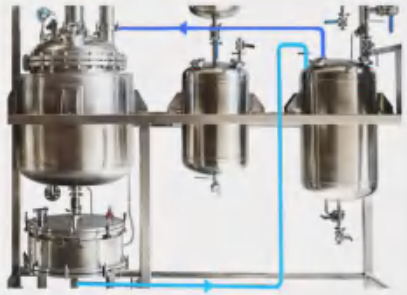
01 Ex Motor & Controller
(UL certification) for safe operation

02 Condenser
High efficient condensation rate

03 Reactor lid can be customized
large feeding port, sight glass, temperature sensor, etc.

04 Jacketed reaction tank
for good insulation effect

05 Double loop design
of mother liquor collection tank.



06 Ball valve design
High-quality ball valve design to support crystallization reactor continuous work.

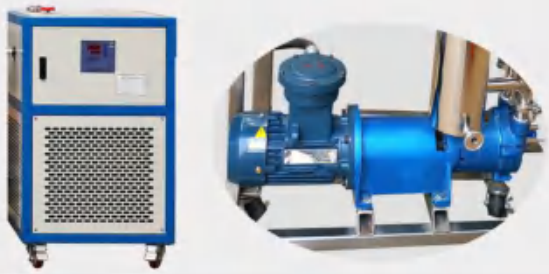
Crystallization 99% purity cbd crystals

07 Crystal filter tank Quick opening design,Bottom wheel design.

convenient to unload and drag out, crystal taken out is very easy and convenient.

Internal stainless steel filter plate, strong bearing capacity, long service life, easy to clean.

08 Heater & chiller
Crystal filter tank Quick opening design,Bottom wheel design



50L crystallization reator

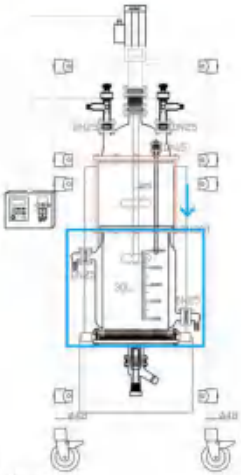
Recrystallization is not generally thought of as a separation technique, rather, it is a purification technique in which a small amount of an impurity is removed from a compound. However, if the solubility properties of two compounds are sufficiently different, recrystallization can be used to separate 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.

1	Ultrasonic emulsification customize	2	Electric automatic lifting
3	Efficient condenser	4	Strong stirring motor
5	PTFE stirring agitator	6	Sand core filter plate
7	Filtration reactor controller	8	Ultrasonic controller
9	Collection flask	10	Strong stainless steel frame
11	Condenser + collection flask, recycle organic reagents, and protect vacuum pumps		
12	Vacuum pump	13	Heating & cooling circulator bath

Electric automatic lifting

(1)

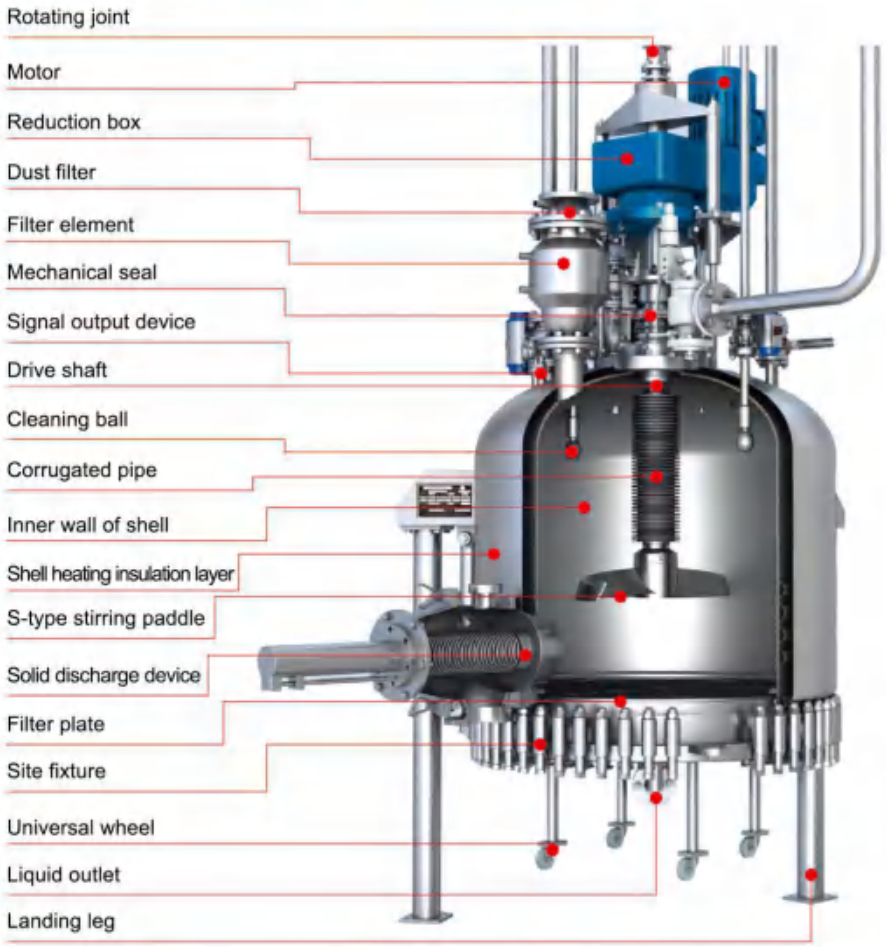
(2)



(1) Filter plate can be disassembled & washed easily.

(2) Reaction vessel & filter plate as a whole part automatic lifting - Suitable for large amount of effective crystal, which are not polluted and easy to take out.

Nutsche filter dryer



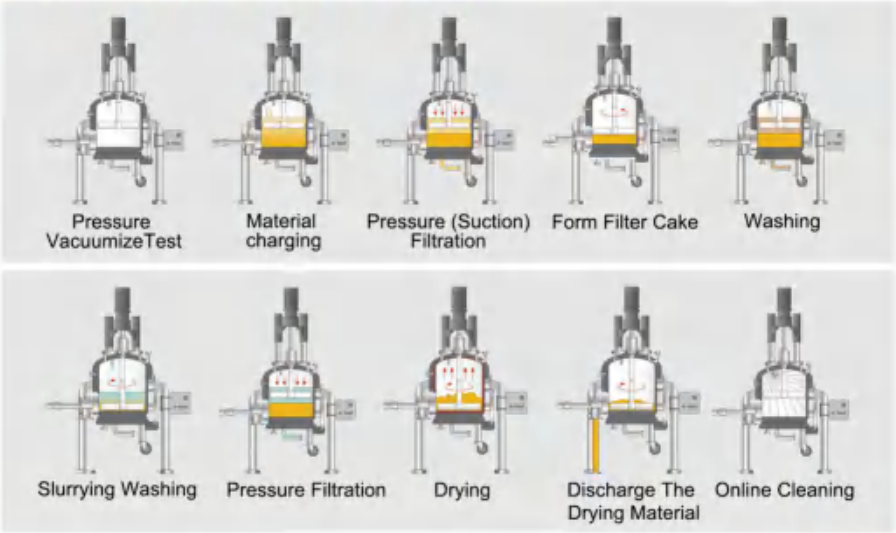
With its high cost performance, TOPTION nutsche filter dryer has successfully become an effective alternative to the filter and dryer, and has an efficient filtration and drying process. Makes the non-metallic lining products be applied to separate highly corrosive solid and liquid media.

Crystallization 99% purity cbd crystals

Technical parameter

Standard type	DN500	DN600	DN800	DN1200	DN1400	DN1600	DN2000	DN2300	DN2800	DN3000	DN3200
Nominal filtration area (㎡)	0.19	0.28	0.5	1.0	1.5	2.0	3.0	4.0	6.0	7.0	8.0
Internal diameter (mm)	500	600	800	1200	1400	1600	2000	2300	2800	3000	3200
Nominal volume (m3)	0.14	0.26	0.53	1.36	1.19	2.99	5.06	6.76	10.8	14.8	16.8
Barrel height (mm)	600	750	900	950	1100	1200	1200	1250	1250	1550	1550
Filter cake height (mm)	120	120	200	250	300	350	400	450	450	600	600
Blades rise height (mm)	150	150	300	300	350	400	450	500	500	550	550
Stirring motor power (KW)	2.2	3.0	5.5	7.5	11	15	18.5	18.5	22	37	45
Net weight (Kg)	1350	1560	2230	4300	5890	6630	11350	13850	16300	18650	21230
Equipment total height (mm)	2560	2890	3130	3900	4360	4680	5150	5280	5520	5750	5850

Filtration, washing & drying steps



1L-2L

- Pneumatic decelerating agitator motor, speed is adjustable.
- The stirring blades can lift manually .
- Solid discharge requires to take the chassis out together with the filter cake.
- Low noise.

5L

- Explosion-proof variable frequency electric stirring.
- Stirring blade manual lifting.
- Solid discharge requires to take the chassis out together with material.
- Variable frequency motor, through the knob precise adjust the speed.

20L

- Electric stirring.
- Hydraulic electric lifting of stirring blade.
- Hydraulic electric lifting of filter chassis.
- Material discharging valve is hydraulic automatic discharging.
- Variable frequency motor, through the knob precise adjust the speed.

Crystallization 99% purity cbd crystals

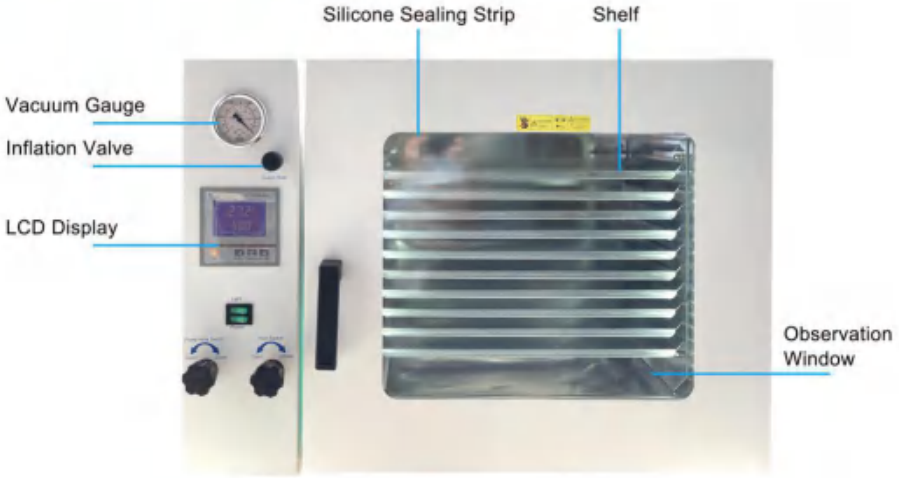
50L

- Electric stirring.
- Stirring blade manual lifting.
- Remove the filter chassis manually.
- Material discharge valve is manual discharge, manually open the discharge valve and scrape out the material by the blade.
- Variable frequency motor, can adjust the frequency and speed through the speed control knob.

200L

- Electric stirring.
- Hydraulic electric lifting of stirring blade.
- Hydraulic electric lifting of filter chassis.
- Material discharging valve is hydraulic automatic discharging.
- Variable frequency motor, through the knob precise adjust the speed.

Drying oven



Technical parameter

Capacity	50L
Number of tray	10 layers
Dimension and max load (per tray)	41.5*37*0.9cm, 5kg
Tray material	Dedicated aluminum
Liner	Mirror design
N2 access function	Yes
Professional design of the number and color of lamp beads	Yes
Temperature measurement	Yes
Heating method	The 2.5mm stainless steel inner tank is surrounded by heating pipes up and down, left and right, and the outside of the heating pipe is insulation material. After the inner tank is heated, it radiates heat to a small amount of gas in the tank to achieve heating.

Drying oven

Product advantages

- Vacuum drying, low temperature, protect CBD.
- Vacuum drying is to dry from the inside of the crystal to remove the moisture inside the crystal.
- Rich research and production experience, professionally providing drying ovens for customers in the cannabis process.

Exhibition

Since 2004 TOPTION brand cbd extraction | distillation equipment has been used and praised in many counties including Canada, United States, Poland, Russia, Spain, and Switzerland. We plan our overseas exhibitions in advance every year. Up to now, TOPTION has participated in many exhibitions in Canada, Los Angeles, San Jose, and Las Vegas, as well as laboratory exhibitions in Russia and Korea. In December 2020, we will participate in the Las Vegas cbd exhibition again, and in 2021 we will also attend the Switzerland cbd exhibition.

To be your dependable partner in cbd distillation industry, TOPTION are flexible, intelligent, and truly care about your benefits potential of a well-orchestrated cbd processing system. **TOPTION , TOP OPTION!**

Professional Customize | Global OEM | Technical Support

Overseas Installization / Training | Welcome visit factory to negotiate