Pilotech
雅程设备

About
PILOTECH

www.shpilotech.com

The world leading R&D
SOLUTION FOR EXTRACTION TANK

- Famous brand for extraction tank in China
- 20 years continuous development
- Over 2,000 customers all over the world

The Multi-function Extracting Tank - innovative solutions for extracting tank in the laboratory

Pilotech experiment multi-function extraction thickening recycling set is a new developed product based on reference to domestic and foreign similar products, suitable for extraction of Chinese herbal medicine, natural product, health care product, biological pharmacy, cosmetics and food, together with supersonic extraction, ultrasonic extraction and dynamic extraction under normal pressure and temperature , extract vacuum relief concentration as well as volatile aromatic oil recovery, with a concentration proportion of 1.1-1. 38. It can achieve dynamic and continuous ultrasonic extraction and vacuum relief concentration at ultra-low temperature.

The Multi-function Extracting Tank

The world leading R&D solution for Multi-function Extracting Tank

The composition of the multifunction extraction tank

The multifunctional extraction tank consists of an extraction tank, a reflux condenser, an oil-water separator, an extraction tank filter, a stainless steel heater, a concentration tank, a collection tank, a vacuum pump, an Omron temperature controller, a stainless steel frame, connecting pipe valves and instruments. It is suitable for small-batch production and application in various colleges and universities, scientific research institutes, enterprises, and pharmaceutical R&D departments.

Function

Hot reflux extraction or normal pressure extraction, normal pressure hot reflux/ decompression concentration, normal pressure concentration, vacuum concentration (online ultrasonic extraction function is optional).

Features

① Small area coverage of 2-3㎡. Works directly with water and power with a minimum inventory of 0.3kg and a maximum inventory of 5kg.

② Equipped with reflux condenser and oil-water separator, volatile aromatic substances in the materials can be recovered.

③ Heat transfer oil circulation heating (no pressure between laminations) ensures uniform heating.

④ Equipped with vacuum decompression concentrator, the concentration efficiency is higher and the concentration ratio reaches 1.1-1.38.

⑤ It can be used as a pilot plant for natural herbal medicine extraction. It is suitable for the extraction and concentration of Chinese herbal medicine, tea and fruit juice in scientific research institutions, colleges and universities, hospitals, pharmaceutical factories and food industries.

⑥ It integrates multifunctional extraction and vacuum concentration, has the functions of hot reflux circulation extraction, concentration, conventional extraction, concentration, and water sedimentation, and is easy to operate.

⑦ The parts in contact with materials are made of stainless steel and can work under negative pressure or normal pressure.

⑧ The stainless steel filter at the bottom greatly improves the working environment and efficiency.

⑨ Low temperature concentration ensures product quality, dynamic cycle evaporation improves heat transfer efficiency, effectively solves the problem of decreased heat transfer efficiency due to increased concentration, saves energy and improves efficiency.

⑩ Features of the multifunctional extraction tank

10.1 High efficiency. The newly developed ultra-small ultrasonic dynamic extraction and condensation unit optimizes the structure based on the original dynamic heat reflux extraction unit, combines the energy-gathering ultrasonic generator with the micro vacuum decompression condenser, and can complete ultrasonic dynamic extraction, filtration, concentration, and condensation in one step, greatly saving raw materials and working time, and improving work efficiency by 60%-80% compared with general multi-functional extraction machines.

10.2 High raw material conversion rate. The unique physical and cavitation effects of ultrasound can cause plant cell walls to rupture or deform, enhancing solute particle vibration, accelerating impact, and acoustic pressure shearing, which is beneficial for the precipitation of effective ingredients in traditional Chinese medicines. Extraction efficiency is significantly improved, up to 45% higher than traditional processes.

10.3 Ultrasonic extraction is carried out at room temperature, effectively reducing the loss of heat-sensitive components. In addition, the ultrasonic extraction and concentration device uses a titanium alloy energy generator, and large-grained Chinese medicinal materials are fully in contact with the ultrasonic probe, accelerating the uniform precipitation of effective ingredients.

10.4 The equipment has a compact structure and gives full play to the role of the ultrasonic energy generator. Ultrasonic waves directly act on the material, strengthening the mechanical action, cavitation, local high-frequency vibration, high impact force and high sound pressure shearing of Chinese medicine extraction, shortening the extraction time by 4/5 and increasing the raw material processing capacity.

10.5 The ultrasonic extraction equipment and the vacuum decompression condenser can work independently or in combination.

10.6 The conversion rate of raw materials is high. When concentrating, the evaporation chamber works at a lower temperature to maximize the retention of heat-sensitive active ingredients. This can better retain the efficacy of the concentrated drug.

10.7 Wide applicability. The extraction of Chinese herbal medicine is not limited by the polarity or molecular weight of the ingredients, and is suitable for the extraction of most Chinese herbal medicine ingredients. The equipment is a fully enclosed internal circulation structure, equipped with an oil-water separator and a condenser, and can reuse precious solvents.

10.8 Applicable frequency range: 15KHz, 20KHz, 28KHz, 30KHz, 35KHz, 40KHz, 50KHz, 60KHz, 80KHz

10L Multi-functional extraction machine technical parameters

1. Extraction tank volume is 10L, three layers stainless steel structure, out heat preservation, middle layer heating, inner is polished.

2. System configuration: stainless steel extraction tank (10L), tube type condenser (Condensation area is 0.5㎡), Oil-water separator (which can recover volatile aromatic oil from materials), sight glass, water-ring vacuum pump, vacuum pump water tank, Omron temperature controller, vacuum meter, electric heater, electrical control cabinet, connecting pipe valves etc.

3. Evaporation chamber vacuum degree: 0～-0.08MPa.

4. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

5. Cooling water consumption: 0.5t/h. Cooling water pressure: <0.3MPa.

6. It integrates multifunctional extraction and vacuum concentration into one, simplifies operation, and has functions such as hot reflux circulation extraction, alcohol extraction, concentration, conventional extraction, concentration, and water sedimentation, which simplifies the operating procedures.

7. The unit is made of SUS304 stainless steel and can work under negative pressure and normal pressure conditions.

8. The bottom is equipped with a perforated plate and a stainless steel filter.

9. SUS304 stainless steel material.

20L Multi-functional extraction machine technical parameters

1. Extraction tank volume is 20L. Material feeding 0.3～5kg/batch. Three layers stainless steel structure, outer heat preservation, middle payer heating, inner is polished.

2. System configuration: stainless steel extraction tank (20L), tubular condenser (condensing area 0.5㎡), oil-water separator (volatile aromatic oil in recyclable materials), sight glass, water ring vacuum pump, Omron temperature controller, vacuum gauge, electric heater, sanitary safety valve, electrical control cabinet, connecting pipe valve, etc.

3. The unit is equipped with a concentration tank with higher concentration efficiency, concentration ratio reaching 1.1～1.38.

4. Evaporation chamber vacuum degree: 0～-0.08MPa.

5. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

6. Heating power: 380V; three-phase five-wire; 9KW.

7. Cooling water consumption: 1t/h. Cooling water pressure: <0.3MPa.

8. It is used for water extraction and as a pilot plant for natural herbal extraction. It is suitable for the extraction and concentration of Chinese herbal liquid, tea and fruit juice in scientific research institutions, colleges and universities, hospitals, pharmaceutical factories and food industries.

9. It integrates multifunctional extraction and vacuum concentration, and has functions such as hot reflux circulation extraction, alcohol extraction, concentration, conventional extraction, concentration, and water sedimentation, which simplifies the operation.

10. The unit is made of SUS304 stainless steel and can work under negative pressure and normal pressure conditions.

11. The bottom is equipped with a stainless steel perforated plate and a stainless steel filter, and the side flange is used for slag discharge.

12. SUS304 stainless steel material.

30L Multi-functional extraction machine technical parameters

1. Extraction tank volume is 30L. Material feeding 1～6kg/batch. three layers stainless steel structure, out heat preservation, middle layer heating, inner is polished.

2. Equipped with reflux condenser and oil-water separator, volatile aromatic substances in the materials can be recovered.

3. Vacuum decompression concentration can save energy and improve efficiency, and the concentration ratio can reach 1.1~1.38 (Chinese herbal medicine extract).

4. Evaporation chamber vacuum degree: 0～-0.08MPa

5. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

6. Heating power: 380V; three-phase five-wire; 12KW

7. System configuration: extraction tank, reflux condenser, oil-water separator, electric heater, concentration tank, recovery tank, vacuum pump, vacuum pump circulating water tank, temperature controller, stainless steel frame and connecting pipe valves, instruments, etc.

8. Cooling water consumption: 1t/h. Cooling water pressure: <0.3 MPa.

9. The jacketed water bath is heated, and the heating is even.

10. It integrates multi-functional extraction and vacuum concentration, and has the function of heat reflux circulation, which simplifies the operation.

50L Multi-functional extraction machine technical parameters

1. It integrates multifunctional extraction and vacuum concentration, and has heat reflux circulation function, which is easy to operate.

2. System configuration: stainless steel extraction tank (50L), tubular condenser (condensing area 2㎡), oil-water separator (volatile aromatic oil in recyclable materials), sight glass, water ring vacuum pump, Omron temperature controller, vacuum gauge, electric heater, sanitary safety valve, electrical control cabinet, connecting pipe valve, etc.

3. The unit is equipped with a concentration tank, which has higher concentration efficiency and a concentration ratio of 1.1～1.38.

4. Evaporation chamber vacuum degree: 0～-0.08MPa

5. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

6. Heating power: 380V; three-phase five-wire; 18KW

7. Cooling water consumption: 2t/h. Cooling water pressure: <0.3MPa

8. It can be used for water extraction and as a pilot plant for natural herbal extraction; it is suitable for the extraction and concentration of Chinese herbal liquid, tea and fruit juice in scientific research institutions, colleges and universities, hospitals, pharmaceutical factories and food industries.

9. It integrates multifunctional extraction and vacuum concentration, has functions of hot reflux circulation extraction, alcohol extraction, concentration, conventional extraction, concentration, water accumulation, etc., and is easy to operate.

10. The unit is made of SUS304 stainless steel material that work in negative pressure and ordinary pressure conditions.

11. The slag is discharged from the bottom without dead corners or residue.

12. SUS304 stainless steel material.

80L Multi-functional extraction machine technical parameters

1. Extraction tank volume is 80L. Raw material feeding amount is 2～8kg/batch. Three layers stainless steel structure, outer heat preservation, middle payer heating, inner is polished.

2. The system is equipped with a reflux condenser and an oil-water separator to recover volatile aromatic substances in the material.

3. System configuration: stainless steel extraction tank (80L), tubular condenser (condensing area 2㎡), oil-water separator (volatile aromatic oil in recyclable materials), sight glass, water ring vacuum pump, Omron temperature controller, vacuum gauge, electric heater, sanitary safety valve, electrical control cabinet, connecting pipe valve, etc.

4. Units are equipped with concentration tank with a more concentrating efficiency, concentration ratio reaching 1.1～1.38.

5. Evaporation chamber vacuum degree: 0～-0.08MPa.

6. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

7. Heating power: 380V; three-phase five-wire; 22.5KW

8. It can be used for water extraction and as a pilot plant for natural herbal extraction; it is suitable for the extraction and concentration of Chinese herbal liquid, tea and fruit juice in scientific research institutions, colleges and universities, hospitals, pharmaceutical factories and food industries.

9.It integrates multifunctional extraction and vacuum concentration, has functions of hot reflux circulation extraction, alcohol extraction, concentration, conventional extraction, concentration, water accumulation, etc., and is easy to operate.

10. The unit is made of SUS304 stainless steel material that work in negative pressure and ordinary pressure conditions.

11. The slag is discharged from the bottom without dead corners or residue.

100L Multi-functional extraction machine technical parameters

1. Extraction tank volume is 100L. Material feeding 5～20kg/batch. Three layers stainless steel structure, outer heat preservation, middle payer heating, inner is polished.

2. System configuration: stainless steel extraction tank (100L), tubular condenser (condensing area 3㎡), oil-water separator (volatile aromatic oil in recyclable materials), sight glass, water ring vacuum pump, Omron thermostat, vacuum gauge, electric heater, sanitary safety valve, electrical control cabinet, connecting pipe valve, etc.

3. Units are equipped with concentration tank with a more concentrating efficiency, concentration ratio reaching 1.1～1.38.

4. Evaporation chamber vacuum degree: 0～-0.08MPa

5. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

6. Heating power: 380V; three-phase five-wire; 27KW

7. Cooling water consumption: 3t/h. Cooling water pressure: <0.3MPa

8. It can be used for water extraction and as a pilot plant for natural herbal extraction; it is suitable for the extraction and concentration of Chinese herbal liquid, tea and fruit juice in scientific research institutions, colleges and universities, hospitals, pharmaceutical factories and food industries.

9. It integrates multifunctional extraction and vacuum concentration, has functions of hot reflux circulation extraction, alcohol extraction, concentration, conventional extraction, concentration, water accumulation, etc., and is easy to operate.

10. The unit is made of SUS304 stainless steel material that work in negative pressure and ordinary pressure conditions.

11. The slag is discharged from the bottom without dead corners or residue.

12. SUS304 stainless steel material.

200L Multi-functional extraction machine technical parameters

1. Extraction tank capacity: 200L; concentration tank capacity: 160L; recovery tank capacity: 50L.

2. System configuration: extraction tank, concentration tank, bottom slag discharger, reflux condenser, oil-water separator, extraction tank filter, recovery tank, vacuum pump, vacuum pump water tank, Omron temperature controller, power distribution cabinet and connecting pipes, valve parts, instruments, etc.

3. Units are equipped with concentration tank with a more concentrating efficiency, concentration ratio reaching 1.1～1.38.

4. Evaporation chamber vacuum degree: 0～-0.08MPa.

5. Extraction temperature can be controlled, PID constant temperature control, and set with accuracy of ±2℃.

6. Heating power: 380V; three-phase five-wire; 40KW.

7. It integrates multifunctional extraction and vacuum concentration, has functions of hot reflux circulation extraction, concentration, conventional extraction, concentration, water sedimentation, etc., and is easy to operate.

8 Cooling water consumption: 3t/h, cooling water pressure: <0.3 MPa

9. The unit is made of SUS304 stainless steel material that work in negative pressure and ordinary pressure conditions.

10. The slag is discharged from the bottom without dead corners or residue.

11. SUS304 stainless steel material.

Suitable for extraction of Chinese herbal medicine, natural product, health care product, biological pharmacy, cosmetics and food, together with supersonic extraction, ultrasonic extraction and dynamic extraction under normal pressure and temperature , extract vacuum relief concentration as well as volatile aromatic oil recovery, with a concentration proportion of 1.1-1.38. It can achieve dynamic and continuous ultrasonic extraction and vacuum relief concentration at ultra-low temperature.

Trusted by the users

Over 2,000 domestic customers of top universities, enterprises and research institutes use our extraction tank. And exported to more than 60 countries & regions such as the United States, Italy, South Korea, Mexico, Singapore, Canada, Malaysia, Chile and Russia etc.

Wide range of applications

Our extraction tank has a good performance for natural herb extraction. This technique has successfully processed in the following areas:

- Tea
- Coffee
- Fruit juice
- Herbal liquid
- Natural products
- Chemical industry
- Food and beverage industry
- Pharmaceutical industry (including the antibiotic industry)
- Manufacturing industry (that use specific plant ingredients)

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