Centrifan™ PE Personal Evaporator/Condenser

MODULAR SFC™

Simple, Reliable, Vacuum-Free, Safe for Samples and Users

- **Vacuum-Free** - no bumping or splashing to risk sample purity and yield
- **Centrifugal Evaporation** - sample securely pressed in spinning containers
- **Versatile** - ideal for LC fractions, synthesis reactions, harsh inorganic chemistry, cold room operations, toxic compounds, radioisotopes
- **Low Maintenance** - no vacuum pump; no noise; simple unattended operation
- **Temperature** - programmable ambient to 55°C
- **Off-Timer** - programmable from minutes to hours
- **Green Solvent Recovery** - captured gas recirculates in a closed system; toxic materials are contained
- **Easy-to-Use** - close the lid to start
- **Flexible** - concentrate samples, evaporate to complete dryness, or collect distillate
- **Compact** – portable, minimal bench space
- **Containers** - use 20/30/40 mL scintillation vials, 1.6 mL Eppendorf tubes, 4 mL (1 dram) vials, or 16 mm x 100 mm test tubes
- **Low Cost** - $4,900

The Centrifan PE uses self-generating blow-down technology to evaporate samples without a vacuum pump within a closed system. Centrifugal force protects samples from loss and cross-contamination, freeing operators for other tasks. If you are using a rotary evaporator, see how the Centrifan PE can save 1-operator-hour per sample.

Eliminate Sample Drying Risk while Freeing Operator Time

The Centrifan PE employs a novel, recirculating evaporation technique that reuses a captured volume of gas and generates its own gas flow to efficiently evaporate samples in standard 20 mL scintillation vials. The technique eliminates the need for a vacuum pump or a large supply of blow down gas, significantly reducing cost, complexity, noise, and maintenance compared to rotary evaporators, vacuum centrifuges, and conventional blow-down equipment. Because it operates without vacuum, the Centrifan PE eliminates the potential for cross contamination and sample loss caused by solvent bumping.

Vacuum-Free, Closed System Drying

The Centrifan PE has a spinning rotor with fan blades that generate a high flow rate of drying gas which is directed onto the surface of the solvent in the scintillation vials. The rotor generates centrifugal force to keep 100% of the solute pressed in the scintillation vials, thus preventing compound loss and cross contamination. Solvent vapors from the trapped volume of gas are continuously flowed through a secondary loop with a dry ice cold trap to prevent release of toxic fumes. The unit may be purged of air with a nitrogen bleed to perform oxygen-free drying.

Rotors

- 6 x 20 mL Scintillation Vials
- 6 x 30 mL Scintillation Vials
- 4 x 40 mL Scintillation Vials
- 8 x 16 mm x 100 mm Test Tubes
- 8 x 1.6 mL Eppendorf Tubes
- 8 x 4 mL (1 dram) Sample Vials

Rotors for proprietary sample containers have been produced.

Compact, Portable

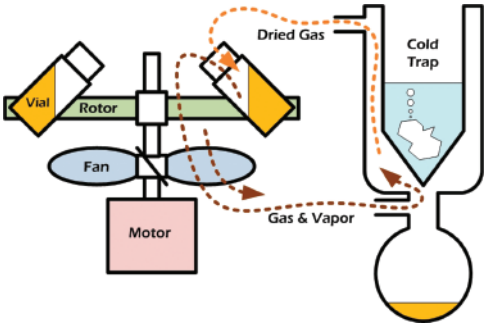
With a small 8 in. x 12 in. footprint and only 18 in. high, the Centrifan PE is self-contained, requires little bench or hood space, and will even fit in a hotcell.

Configurations

Centrifan PE-L (Lite) has no cold trap; vent to a hood or use with aqueous solutions.

Centrifan PE includes a cold trap for recovering all evaporated solvents.

Centrifan PE-T (Timer) includes the cold trap and an Off-Timer for stopping evaporation before samples reach complete dryness.



Centrifan™ PE Personal Evaporator/Condenser

Specifications

Rotor Capacities	6 x 20 mL Scintillation Vials 6 x 30 mL Scintillation Vials 4 x 40 mL Scintillation Vials 8 x 16 mm x 100 mm Test Tubes 8 x 1.6 mL Eppendorf Tubes 8 x 4 mL (1 Dram) Sample Vials
Temp Controller Range	Ambient to 55°C
Ambient Temperature	2°C to 40°C
Cold Finger Capacity	1 L non-freezing liquid plus dry ice nuggets
Power Requirements	115/230 VAC 50-60 Hz 200 watts
Fuse Ratings	3 A (115 V and 230 V) fast acting, 5 mm x 20 mm
Dimensions	12" (30.5 cm) w x 8" (20.3 cm) d x 18" (45.7 cm) h
Weight	12 lbs (5.5 kg)

Drying Rates for Typical Solvents in 20 mL Vials*

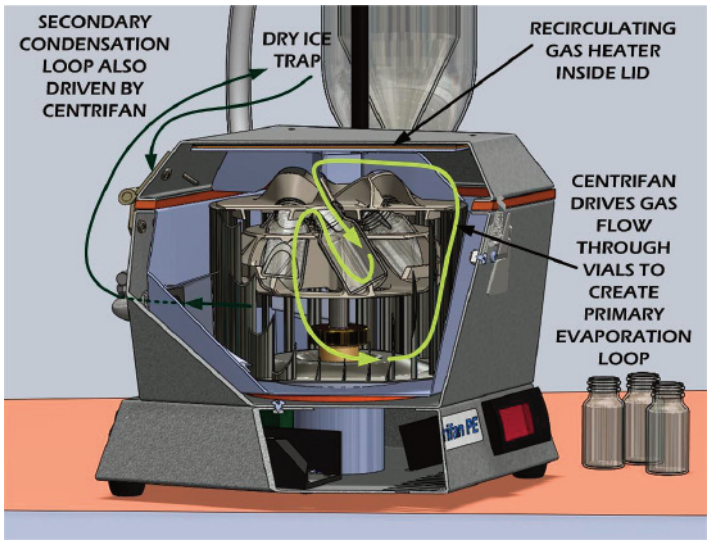
Solvent	Total Volume	Temp. in Rotor	Time to Dry °C
Methanol	6 X 10 mL	40	60 min
Water	6 X 5 mL	40	3 hrs
Hexane	6 X 10 mL	40	15 min
Acetone	6 X 10 mL	40	35 min
Isopropyl Alcohol	6 X 10 mL	40	70 min
DMSO	6 X 1 mL	40	12 hrs
Methylene Chloride	6 X 10 mL	40	25 min
AcN/H_20 (70/30)	6 X 10 mL	40	3 hrs

**Evaporation rates were obtained with ethanol and dry ice in the trap.*

Reduces Operator Time for Rotary Evaporation

The Centrifan PE can be used to efficiently dry the last 10 mL of product solution in a 20 mL scintillation vial with confidence and unattended operation. After transferring the 10 mL aliquot from the rotorvap round-bottom flask to the scintillation vial, the operator simply places the sample in the rotor of the Centrifan PE and closes the lid to start the unit. The solution in the scintillation vial dries securely in the Centrifan PE without further monitoring and frees lab workers for other tasks.

- Speeds compound finishing into 20 mL vials from a rotorvap
- Allows risk-free drying and storage of final solution in convenient scintillation vials
- Enables completely unattended operation
- Frees lab associates for other tasks
- Utilizes rotorvap for intended large volume processing
- Increases overall evaporation process productivity



4 Month ROI

The Centrifan PE will return 1 man-hour for every rotorvap job where a 20 mL scintillation vial is specified as the final collection container. At common FTE costs and processing a sample with the rotorvap only 2 to 3 times per week, the $4,900 cost of the Centrifan PE will be recovered in 3 to 5 months.

"The Centrifan PE has streamlined and simplified our work-flow through unattended, convenient, and safe processing of the final dry-down step of purified material before returning to the client."

Paul Lefebvre, Laboratory Director
Averica Discovery Services, Inc., Worcester, MA USA

Sample Safe Drying of Radioactive and Other Toxic Compounds

Because it is vacuum free and produces its own drying gas flow within a closed system, the Centrifan PE eliminates the potential for sample loss and contamination, making it particularly advantageous for chemists working with radioactive and other highly toxic compounds. The system is ideal for preparing radiolabeled compounds for mechanism of action studies in drug discovery and diagnostic isotope preparation of injectable solutions.

MODULAR SFC™

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NEW PROPRIETARY EVAPORATION TECHNOLOGY YOU SHOULD KNOW ABOUT

- Easy to use – no vacuum pump, no gas supply
- Troublefree drying – no sample loss, cross-contamination
- Self-generating blowdown – safe, simple, and reliable
- Recirculating evaporation recovers solvents
- Most economical to purchase & operate

Possible Problems with Common Evaporation Systems	Vacuum Centrifuge	Rotary Evaporator	Nitrogen Blowdown	Freeze Dryer	Centrifan PE ADVANTAGES
Sample loss from bumping caused by vacuum	✗	✗		✗	No vacuum pump eliminates bumping
Cross-contamination from splashing	✗		✗		Centrifugal force prevents splashing
Dry sample blown from vial; lost and contaminated			✗		Centrifugal force ensures material retention
Sample lost from bumping when vacuum slow and sample melts				✗	No vacuum pump eliminates bumping
Must freeze sample before loading				✗	No pre-freeze required
Safety issues concerning glassware under vacuum		✗			No safety concern because no vacuum
No recovery of volatile extract compounds	✗		✗	✗	Condenses all recirculating vapor
Solvent vapor lost through vacuum pump or vent	✗	✗	✗	✗	Closed green system condenses all vapor
Vacuum pump noise degrades lab work environment	✗	✗		✗	Makes no noise
System complexity requires maintenance vigilance	✗	✗		✗	One moving part 3-year warranty
Evaporator down because of vacuum pump rebuild	✗	✗		✗	No vacuum pump minimizes breakdowns
Consumes large quantities of electricity or drying gas	✗	✗	✗	✗	Low power & gas
Relative Speed of Evaporation (MeOH, AcN, Ether)	2	1	3	4	4
Relative Speed of Evaporation (Water, DMF, DMSO)	3	3	1	3	2
Price	$7K - $40K	$7K - $20K	$.1K - $10K	$10K - $40K	$6K

SEE OTHER SIDE: TAKE ADVANTAGE OF AN ADVANCE IN EVAPORATION TECHNOLOGY

CENTRIFAN PE

For additional information, please contact us at infor@modularsfc.com or call 508-520-4000.

TAKE ADVANTAGE OF A DRAMATIC ADVANCE IN EVAPORATION TECHNOLOGY - CENTRIFAN PE

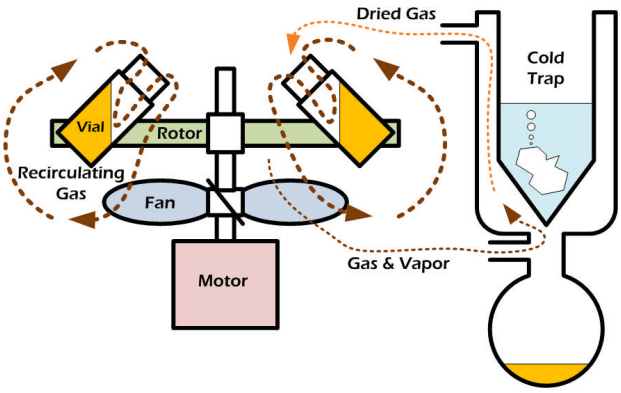
A Better Way to Evaporate Solvents

The Centrifan PE Personal Evaporator dries six 20mL vials at once, off-loading this finishing step from your rotorvap resource. Also, realize new-found flexibility and convenience when drying a single 20mL vial by just closing a lid instead of having to deal with vacuum pumps and water baths.

- Simple, robust and safe
- Easy-to-use and low cost of operation
- Significantly less expensive than typical vacuum concentrators
- No vacuum pump or continuous supply of gas required
- Uses 20mL scintillation and other common vials
- Works with all common solvents including high boilers (water, DMF, DMSO); acid-proof available
- Replaces polluting nitrogen blow-down set-ups

Easy Operation

The Centrifan PE is easy to use — even the cold trap is hassle-free if you cool with a frozen water bottle. It makes no noise and takes up very little bench space. It can be used in a cold room to dry heat sensitive compounds and it can be purged with nitrogen or argon for oxygen-free drying. Bleeding inert dry gas into the PE will also drive down the final solvent content in the sample, below that achievable by condensation alone.



Simple Design for High Reliability

The inexpensive evaporator/condenser can withstand years of labwork with no operator monitoring of samples and virtually no maintenance. It is a simple, green chemistry tool to dry lab-scale samples and condense the evaporated solvent. The high vapor recovery allows choosing the Centrifan PE when the condensate is the final product!

Recirculating Evaporation Recovers Solvents

The Centrifan PE uses self-generated blow-down technology to dry samples in standard vials. Fan blades integrated with the rotor generate the gas flow. A portion of the gas flow is continuously diverted through the cold trap to condense and recover the evaporated solvent.

SEE OTHER SIDE: NEW PROPRIETARY EVAPORATION TECHNOLOGY YOU SHOULD KNOW ABOUT

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