

- **DMSO, DMF, WATER** can be evaporated with **NO BUMPING**
- Solvent removal directly from **HPLC / LC / GC vials**
- Sample evaporation after fractionation, NMR measurement, etc.

Smart Evaporator

MADE IN JAPAN

Trusted by **Over 10,000** Scientists—And Counting
Up to **90% Less** Energy Than Rotary Evaporators



New Technology
Business Promote Prize

The 55nd GOOD COMPANY Award
(The Medium and Small Business Research Institute)



Grand Prize

The 42nd Invention Award
(the Japan Society for the Advancement of Inventions)



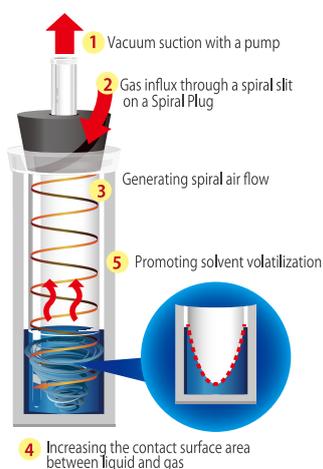
Grand Prize

The 7th Kanagawa "Industrial Navi Award"
(Kanagawa Welfare Foundation for Entrepreneurs, Japan)

Innovative Evaporator



Vacuum Vortex Concentration



Fast and Effective Evaporation

Solvent / Capacity	Flow rate	40°C	70°C
Hexane / 5 mL (20 mL vial)	15L/min	3 min	3 min
Acetone / 5 mL (20 mL vial)	15L/min	4 min	3 min
Ethyl acetate / 5 mL (20 mL vial)	15L/min	6 min	5 min
Acetonitrile/ 5 mL (20 mL vial)	15L/min	9 min	8 min
Methanol / 5 mL (20 mL vial)	15L/min	10 min	6 min
Ethanol / 5 mL (20 mL vial)	15L/min	10 min	6 min
*Deionized Water / 5 mL (20 mL vial)	29~30L/min	49 min	28 min
*DMF / 5 mL (20 mL vial)	20~30L/min	43 min	24 min
*DMSO / 5 mL (20 mL vial)	23~30L/min	195 min	69 min
*NMP / 5 mL (20 mL vial)	25~30L/min	N/A	71 min

* Gas purge data



DMSO, DMF, Water

The Smart Evaporator enables efficient evaporation of high-boiling point solvents - even DMSO, DMF, and water.

All models are with the heating function, and the covered models* allow the use of inert gas, which accelerates faster evaporation. (*C1 and C10)



In Vial Evaporation

The Spiral Plugs come in various sizes to fit to container mouth inner diameter from 4mm to 32mm. With the aluminum beads on the bottom*, various sizes and shapes of tubes / vials are applicable for evaporation.

Containers from other instruments or storage can be used directly, minimizing the loss by sample transfer (*features for C1 and K4)



Bump Free Technology

The novel Spiral Plug technology generates a helical flow of air over the surface of the solvent, thereby increasing the surface area. Since the container isn't under high vacuum, there is no risk of bumping or splashing.



Successful Applications with the Smart Evaporator



"The Smart Evaporator has cut down the time I produce product by 75%. For my research, I have to do chemical synthesis to conjugate two products together."
– Ms. Teodora "Tia" Nedic, Pharmaceutical Sciences, UC Irvine



"Smart Evaporator solved the critical challenge of DMSO removal, enabling efficient drying of pharmaceutical samples and expanding applications like peptide purification."
– Dr. Davison / Dr. Fujii, Purdue University Department of Medicinal Chemistry and Molecular Pharmacology



"Smart Evaporator enabled faster evaporation and reduced monitoring workload while protecting sensitive analytes through low-temperature concentration."
– Mr. Kasel, Donaldson Filtration Solutions

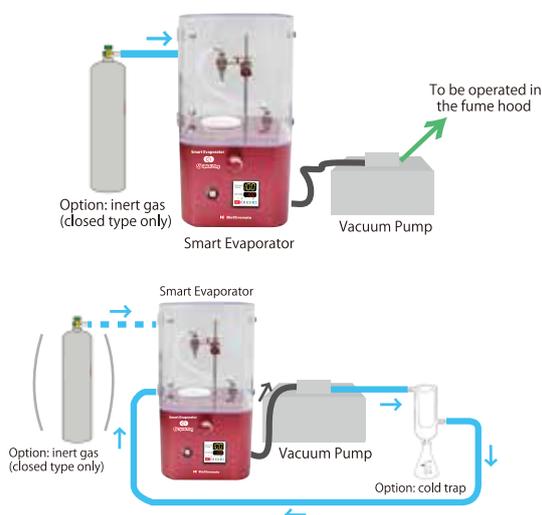
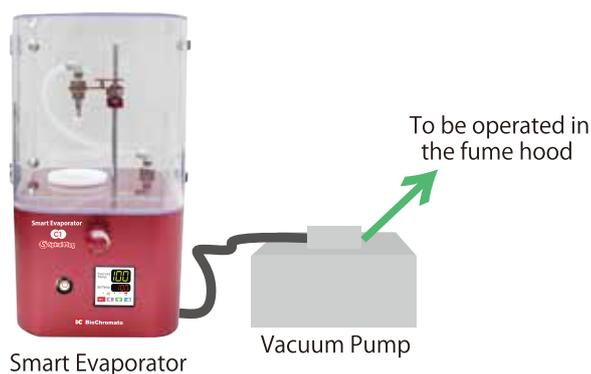
Users' Fields

Bioimaging, Biomaterial, Chemical Biology, Chemical Bioscience, Molecular Biology, Nuclear Medicine, Forensic Medicine, Drug Assay, Organic Synthesis, Pharmacognosy, Archaeometry, Natural Products Chemistry, Nutritional Biochemistry, Food Analysis, Catalyst Chemistry, Surface Chemistry, Complex Chemistry, Inorganic, Chemistry, Particle Chemistry, Material Chemistry, Metalorganic Chemistry, Analytical Chemistry,

Application Examples

- Solvent removal (for substitution) after HPLC, LC/MS, GC/MS
- Sample concentration after preparative fraction
- Solvent removal after NMR measurement
- Concentration of natural product extract
- Concentration after solid phase extraction
- Concentration of radioisotope labeled compounds
- Concentration of surfactant solutions
- Pretreatment for multiple sample in drug analysis
- Pretreatment for analysis of photosynthetic pigment

Installation example



Smart Evaporator – models, accessories & specs

Smart Evaporator C1

Catalog code	CEV1B-SU / SK
Size	W220 x D227 x H382 mm
Weight	4.3kg
Heating	Room temp. ~ 100C
Heating cup	Round shape / ϕ 69mm
Color	2 (Sun, Sky)
Gas purge	Yes
CE marking	Yes



*Colors may vary depending on the country. Please contact us for details.

Smart Evaporator K4

Smart Evaporator C10

Catalog code	CEK4-SU-P (plug size 1-5)	CEV10L-SU-P (plug size 1-3)
Size	W434 x D156 x H414.2mm	W350 (480) x D300 x H531 mm
Weight	4.8kg	20kg
Heating	Room temp. ~ 100C	
Heating cup	Rectangle / W226 x D55mm	Round shape / with vial holder
Color	1 (Sun)	
Gas purge	No (special order possible)	Yes
CE marking	Yes	Yes



Spiral Plug SP-S series

Spiral Plug SP-V series

Spiral Plug E series

Catalog code	SP-P (plug size No. 1-5)			SP-V (plug size No. 1-5)		SP-E(plug size No. 1-2)	
Plug Material	PTFE			fluoroelastomer (FKM)		PTFE	
Size No. (Inner ϕ of container)	1 (4~7mm)	2 (7~11mm)	3 (11~17mm)	4 (15~24mm)	5 (24~32mm)	E1 (1.5mL microtube)	E2 (5.0mL microtube)



Filter for C1

Catalog code	CEV-F-00
Size	L110 x ϕ 26 mm
Connection	R1/4 (male)
Filter material	Polyethylene



4Kit for C1

Catalog code	UW4-C1B
Parts Included	4-channel head 3-Way Vial Holder 4 x SP-P1 4 x SP-P2 4 x 2ml Vial 4 x 4ml Vial 4 x 6ml Vial
One kit converts C1 to 4 position that accommodates vials of 3 sizes	



Pump Information

All Smart Evaporators need to be connected to a DIAPHRAGM VACUUM pump for operation*. The pump has to be capable of continuous suction at atmospheric pressure; and should reach the pressure of -40kPa (61.3×10^3 Pa) ~ -50kPa (51.3×10^3 Pa) or more.

The reference flow rate per plug size (= container mouth inner diameter) is as shown below. For multi-channel models, multiply the flow rate by the number of the channel.

*Please contact us for more detail and recommendations.

Inner diameter of container	Plug Size	Reference suction flow rate
4~7mm	Plug Size:1	13L/min
7~11mm	Plug Size:2	15L/min
11~17mm	Plug Size:3	30~33L/min
15~24mm	Plug Size:4	50L/min
24~32mm	Plug Size:5	58L/min

■ Distributor

■ Manufacturer

No.07

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