Performance examples of Smart Evaporator

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BioChromato,Inc. Sales Department

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Performance examples of Smart Evaporator

【No.1】University / Natural products chemistry

【No.2】University/ Chemical biology

【No.3】University “T” /Synthetic organic chemistry

【No.4】Akita Prefectural Hospital Organization
Akita Prefectural Research Institute for
Brain and Blood Vessels
Radiology Research Department
Mr. Hiroshi Yamaguchi

【No.5】University “T” / Natural products chemistry

【No.6】Meiji University, Applied Chemistry
Department of Science and Engineering Faculty
Mr. Takeo Kurata (aroma chemical/petrochemistry)

【No.7】Sophia University/ Organic chemistry/
Biochemical marker

【No.8】Drink manufacturer / Microbe/ Cell component

【No.9】Pharmaceutical company / Drug development

【No.10】Musashino University, Pharmaceutical Department
of Pharmaceutical Science Faculty
Mr. Takuya Kumamoto

【No.11】Hamamatsu University of Medicine,
Medicine Department of Medical Faculty
Forensic medicine Mr. Koutaro Hasegawa

*Some customers’ names or company names are included with permission.

No.1 University / Natural products chemistry

Research Keyword: Natural products/ NMR

Deciding factor of purchase

①This is easy to concentrate DMSO solution that is not applicable to freeze-drying.

②This achieves the drying of DMF in one hour at 40 Celsius.

Before purchase We struggled to concentrate DMSO solution with freeze-drying machine.

Applications We also apply Smart Evaporator for concentrating DMF, and this is also heated up at 40 Celsius. We put 1ml of DMF in 10cm test-tube, 10ml in a vial, 25ml in eggplant- shaped flask and all was successfully dried up within one hour.

Customer Feedback (extracted)

"We used to use freeze-drying machine for DMSO evaporation, but it was difficult.
(This may be because of a high concentration of sample.)
Smart Evaporator easily achieves DMSO evaporation, and this improves our working efficiency."
"We try a rotary evaporator at the same, and that dries up almost none even after 2 hours so we are impressed with the performance of Smart Evaporator."

No.2 University/ Chemical biology

Research Keyword: ----

Deciding factor of purchase

① This is easy to concentrate DMSO as advertised on brochures.

Before purchase It was difficult to concentrate DMSO.

Applications We use Smart Evaporator for concentrating DMSO.
We use rotary evaporator for big portions, and centrifugal evaporator when we examine several numbers of small portion samples.

Customer Feedback (extracted)

“ At first we have interests in brochures our agencies brought to us, then we ask for test demo to use Smart Evaporator if that can easily achieve DMSO concentration, which we struggle for many times. ”

“ We select Smart Evaporator in case when we concentrate DMSO. ”

No.3 University “T” / Synthetic organic chemistry

Research Keyword: ----

Deciding factor of purchase

①This can easily evaporate a small quantity of sample.

②This can be used with any type of vial.

Before purchase In case when using rotary evaporator, we can not directly attach it to a small vial so we had to transfer sample to a large vial. It was a troublesome procedure.

Applications We use Smart Evaporator when we prefer to eventually store sample in a small vial. After synthesis, the storage bulks large if sample is left in eggplant-shaped flask and also since the number of flask is limited, we prefer to transfer sample to a small vial then evaporate it.

Customer Feedback (extracted)

“ I think many researchers of organic chemistry may have the same problems.

Based on experience at laboratories I used to belong to, we mostly have some troubles to do evaporation with small vials, so I think this concept has potential need of users. ”

No.4 Akita Prefectural Hospital Organization ,Akita Prefectural Research Institute for Brain and Blood Vessels Radiology Research Department
Mr. Hiroshi Yamaguchi

Research Keyword: radioactive medicine

Deciding factor of purchase

① This is easy to evaporate NMP.

②We can put this in hot cell, and is space-saving.

Before purchase With rotary evaporator, we were not able to evaporate NMP at all.
When we handled solution consisted of (18F) fluorine ion, we had to put in hot cell to not to be exposed to radiation but rotary evaporator was too bulky in hot cell.

Applications
- NMP: Diluted to 10 times by water, then refine with SepPak.
For efficient procedure,evaporate 10cc of reaction solution to 1cc before diluting by water.
- Fluorine isotope: put 1ml of solution into 20cc screw vial then evaporate it.
Evaporate until it is dried up completely. Heat it up up to 100 Celsius to shorten time.
Complete evaporation in 15 minutes.

Customer Feedback (extracted)

“ Smart Evaporator’s been very useful for evaporating NMP. It is small and space-saving, so we can put it in hot cell. ”

No.5 University “T” / Natural products chemistry

Research Keyword:
Natural products/ plant extract solution

Deciding factor of purchase

①It is easy and also applicable with various vials.
②It has a excellent design.

Before purchase ---

Applications We use Smart Evaporator when evaporating 10ml of sample. The organic solvent having low boiling point is heated up to 30~40 Celsius then evaporate it.

Customer Feedback (extracted)

“It’s been easier than I expected to distillate solvent, and is good that this device is applicable to various vials.”

“I think students in laboratory are using it everyday”

“We seldom find such a highly designed device in laboratory. I feel this is a woman-friendly design. Of course the function has to come first, but if there are two devices with similar function, I would choose the one with a good design.”

No.6 Meiji University, Applied Chemistry Department of Science and Engineering Faculty Mr. Takeo Kurata

Research Keyword:
aroma chemical/ petrochemistry

Deciding factor of purchase

①This can evaporate valuable sample without worry of sample loss.

Before purchase We used to use rotary evaporator for most case, but when handling sample with big portion we struggle with bumping as it's gradually evaporated and condensed. Also it was difficult to remove solvent completely, and the left solvent in vial disturbed the analyzing.

Applications We evaporate solvent in order not to effect to examination result. We even use 2ml vial for evaporation.

Customer Feedback (extracted)

"Smart Evaporator is helpful because I can leave the machine until the evaporation is done."

"We could also transfer sample into 2ml vial and vacuum with a pump, but it still needs a careful adjustment otherwise it is sucked in. So we used to have troubles of loss of valuable sample."

No.7 Sophia University/ Organic chemistry/ Biochemical marker

Research Keyword: Biochemical marker

Deciding factor of purchase

①A problem of sample scattering when using nitrogen blow-down is solved with Smart Evaporator.

Before purchase To store sample in vials, we used nitrogen blow-down evaporator. When handling powdery sample, it was troublesome that sample was scattered.

Applications We use Smart Evaporator for exsiccating final compounds of natural products synthesis.

Customer Feedback (extracted)

"We looked through brochure of Smart Evaporator C1, and readily decided to purchase it because of its easy operation, high functionality and also price."

"Then we actually start using it and found that it has good functions as advertised on brochure. We don't have sample scattering problem anymore."

"We switch from nitrogen blow-down evaporator to Smart Evaporator for evaporating sample in small quantity."

No.8 Drink manufacturer / Microbe/ Cell component

Research Keyword: microbe, bacterial cell

Deciding factor of purchase

①This solves contamination of other sample.

②This is able to replace gas to prevent oxidization.

Before purchase In our company, researchers shared to use centrifugal evaporator,but many times it was occupied by others and contamination of different samples was concerned.

Applications We own two units of Smart Evaporator for different purpose and use these almost everyday. We also handle solvent having high-boiling point such as DMSO. We do evaporation under nitrogen atmosphere in order to prevent oxidization of sample.

Customer Feedback (extracted)

"So far we never have contaminations with Smart Evaporator, but to be more assured we purchase another C1."

"We do evaporation under nitrogen atmosphere in order to prevent oxidization of sample, and this function is useful for sample storage."

No.9 Pharmaceutical company / Drug development

Research Keyword:
compound synthesis, synthetic method

Deciding factor of purchase

① Smart Evaporator achieves easy DMSO/DMF evaporations,
and this shortens working days by 2～3days.

Before purchase After we use solvent for synthesis or sample preparation, we do evaporation of various solvent with rotary evaporator for storage. We had trouble evaporating DMSO or DMF.

Applications ---

Customer Feedback (extracted)

"It is very easy to evaporate DMSO or DMF with Smart Evaporator! Last time when we struggled to evaporate those solvent with ordinary method, we used to spend 2～3days for resynthesis so Smart Evaporator significantly shortens working days."

No.10 Musashino University, Pharmaceutical Department of Pharmaceutical Science Faculty Mr. Takuya Kumamoto

Research Keyword: bioactive compound

Deciding factor of purchase

①No bumping of solvent having low-boiling point.

②Easy operation

③Can be used with various sizes of vials for sample collection.

Before purchase ---

Applications First we use rotary evaporator for the initial evaporation. After sample evaporates to certain amount, we transfer sample from eggplant-shaped flask to vial, then dry up completely. We use solvent having low-boiling point such as methylene chloride or ethyl acetate.

Customer Feedback (extracted)

"Because the mechanism of Smart Evaporator is not sealed type, it's great that it does not cause bumping of solvent with low-boiling point."

"This is helpful for us who are willing to use centrifuge tube made of glass. There are not many evaporators which can attach to those types of containers. Like rotary evaporators which decompress air before use, most likely it bumps because the vial is very narrow. And also in case using resin container, the air decompression changes shape of containers."

No.11 Hamamatsu University of Medicine, Medicine Department of Medical Faculty Forensic medicine Mr. Koutaro Hasegawa

Research Keyword: small quantity of medicinal toxicant, natural toxicant

Deciding factor of purchase

①Temperature control is built-in and it is easy to use.

②Evaporation speed is faster than blow-down evaporator.

Before purchase We used 9ml of test tubes or 4ml of vials, then evaporate it with blow-down evaporator. It was troublesome that we needed to have fine adjustment to set heat block or containers everytime.

Applications We own two Smart Evaporators, and one for each researcher.

Customer Feedback (extracted)

“ We’ve been looking for built-in device, and our agency gave us ideas of Smart Evaporator. This is applicable to various size of container and I also like its small footprint. I think this device is good for method development. ”