



Parallel Evaporation Solutions

Maximum efficiency for multiple samples

Whether you work in R&D or quality control looking for throughput optimization, BUCHI offers a wide variety of accurate and proven solutions covering different industries.



Core messages to our customers

BUCHI creates added value with “Quality in your hands”

“Quality in your hands” is the guiding principle that shapes our philosophy and our actions. It challenges us to provide outstanding services that are precisely tailored to your needs. This means that we must stay in close contact with our customers. That is why we keep in touch and continue to work very hard to understand you and your business even better.

We help you by providing high-quality products, systems, solutions, applications and services that offer you added value. This allows you to focus entirely on your processes and your work.



Easy

You handle complex processes, do challenging work and want to focus on what is essential. We support you by providing carefully designed solutions as well as instruments and systems that are easy to operate.



Competent

You need products, systems, solutions, applications and services that are precisely tailored to your needs. We have the technological expertise and decades of experience needed to provide competent support and work with you to continually improve our market services.



Reliable

You want to be able to rely completely on your partner for products, systems, solutions, applications and services. We guarantee the quality and functionality of our equipment and will continue to help you quickly and efficiently whenever something does not operate to your satisfaction.



Cost-effective

You want to achieve the best possible results using efficient solutions. We help you to handle your jobs and processes economically. We strive to create a high level of economic benefit and maximum added value for you.



Safe

You are working in an environment in which safety is a high priority. By collaborating closely with you, we do everything in our power to make our products, systems, solutions, applications and services as safe as possible for people and the environment.



Global

You value personalized service and short communication channels. As an international family-owned business with our own subsidiaries and qualified distributors, we have a presence wherever our customers are located. Our local staff and the large number of satisfied customers around the world give you the assurance that you are working with the right partner.



Sustainable

You prefer a partner who acts responsibly when it comes to current environmental challenges. We support environmentally friendly processes and manufacture products that have a long service life. We utilize advanced technologies in order to conserve energy and water and leave the smallest environmental footprint possible.



Multiple sample evaporation solutions

Improve your sample throughput and efficiency

You are looking for the most efficient and sustainable way of parallel sample evaporation. For more than 50 years BUCHI has been delivering market leading solutions for evaporation. They include innovative and trusted products, systems, solutions and personalized application support.

Food/Beverage



For parallel evaporation in quality control as well as in development of ingredients.

- Concentration
- Solid phase extraction

Environmental Analysis



For a fast and efficient sample concentration in order to monitor the pollution of the environment.

- Concentration
- Solid phase extraction



For parallel evaporation in quality control as well as in development of ingredients.

- Concentration

Pharmaceutical



For quality control in pharmaceutical industry and in the development of new components.

- Drying
- Concentration
- Solid phase extraction

Chemical



For everyday routine application in quality control, as well as in research and development laboratories where many samples need to be prepared simultaneously.

- Drying
- Concentration

Academia/Education



Academia/Education
For different applications in research as well as for academic education.

- Drying
- Concentration
- Solid phase extraction

Multiple sample preparation process

To improve your sample throughput we offer solutions which fully cover your needs. Whether you focus on multiple small or medium sized volumes, or intend to concentrate or evaporate to dryness BUCHI has the appropriate solution at hand.

Steps before evaporation	Sampling, Synthesis, Extraction, Purification and Solid Phase Extraction		
Steps parallel evaporation	Parallel Evaporation		
Application	Concentration to a pre-defined residual volume of 0.3, 1 or 3 mL	Drying or evaporation	Drying or evaporation
Number of samples	Multiple samples 4, 6 or 12	Multiple samples 4 up to 96	Multiple samples 6 up to 12
Sample volume Minimum Maximum	5 mL 500 mL	0.5 mL 500 mL	0.5 mL 240 mL
Degree of automation	● ●	● ●	●
Evaporation performance	● ● ●	● ● ●	● ●
Solutions by BUCHI	«Parallel Evaporation Pre-Analytical» p. 6	«Parallel Evaporation Throughput» p. 8	«Parallel Evaporation Essential» p. 10
Steps after evaporation	Purification Analysis		

Find more information at:

www.buchi.com/parallel-evaporation/solutions





Solution «Parallel Evaporation Pre-Analytical»

Multiple samples concentration to defined residual volumes

You intend to concentrate up to 12 samples at once to a specific volume. Our time saving, sustainable and highly efficient solution «Parallel Evaporation Pre-Analytical» guarantees maximum reproducibility and highest recovery rates.

Analyst tube
with appendix



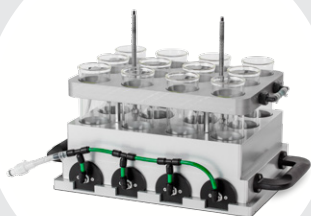
Interface I-300 Pro



Vacuum Pump
V-300



Syncore® Analyst



Flushback module
for 12 samples



Solid Phase
Extraction (SPE)



Recirculating Chiller F-314

Your most important benefits

Reliable

- Highest analyte recoveries thanks to the Flushback module
- No loss of volatile compounds due to cooled appendix
- No cross contamination due to individual sealing
- No contamination by inert materials

Cost-efficient

- Increased productivity by concentrating up to 12 samples to a predefined residual volume
- Low operating cost due to no need of nitrogen
- Improved efficiency by combining SPE (Solid Phase Extraction) and concentration

Sustainable

- Environment-friendly due to high solvent recovery
- No solvent emission
- No water consumption and disposal while using the eco friendly BUCHI chiller

Your solution «Parallel Evaporation Pre-Analytical»



- Syncore® Analyst with stand-alone condenser
- Recirculating Chiller F-314
- Vacuum Pump V-300
- Interface I-300 Pro
- Flushback module
- Solid Phase Extraction (SPE)
- Options: Rack sizes (4, 6, 12 samples)



- Customized application support
- Application booklet
- Workshops trainings
- Minimize downtime thanks to our service hotline
- Preventive maintenance
- Service and documentation (IQ/OQ)

"Our three parallel evaporators are used both in the laboratory and in the ship laboratory container and make sample preparation easier."

Wolfgang Gerwinski, Federal Maritime and Hydrographic Agency, Germany



Solution «Parallel Evaporation Throughput»

Versatile and simultaneous multiple sample evaporation

You are looking for a highly efficient way to evaporate multiple samples at once. Thanks to its vacuum vortex technology and flexibility, our solution «Parallel Evaporation Throughput» greatly improves your sample throughput in a gentle and economical way.

Interface I-300



Vacuum Pump V-300



Polyvap Rack
48 samples



Syncore® Polyvap



Vacuum Cover



Recirculating Chiller F-308

Your most important benefits

Highly productive

- Increased efficiency by concentrating up to 96 samples simultaneously
- Fast evaporation of high-boiling solvents (e.g. H₂O/DMF/DMSO) thanks to efficient heat transfer
- No cross contamination due to individual sealings

Versatile

- Highest versatility working with different sample volumes (0.5 mL – 500 mL)
- Improved flexibility with individually exchangeable racks at one workstation
- Minimal effort when using Syncore® racks in Sepacore® fraction collector

Sustainable

- Environmentally friendly due to high solvent recovery
- No solvent emission
- Energy saving due to simultaneous evaporation of multiple samples
- No water consumption and disposal in combination with the eco friendly BUCHI chiller

Your solution «Parallel Evaporation Throughput»



- Syncore® Polyvap
- Recirculating Chiller F-308
- Vacuum Pump V-300
- Interface I-300
- Polyvap rack for 96 samples
- Vacuum Cover
- Options: Different rack sizes (4, 6, 12, 24, 48, 96 samples)



- Customized application support
- Application booklet
- Workshops trainings
- Minimize downtime thanks to our service hotline
- Preventive maintenance
- Service and documentation (IQ/OQ)

“Combining Sepacore® with Syncore® Polyvap means you can work faster and better. The active substances produced are purer. This is the key to fast, cost-efficient, high-quality analysis.”

Bogor Agriculture University, Indonesia



Solution «Parallel Evaporation Essential»

Parallel evaporation for your fundamental needs

You are looking for an efficient way of processing multiple samples simultaneously. The solution «Parallel Evaporation Essential» with its compact 12 sample parallel vortex evaporator is designed to save time and improve your sample throughput in a gentle way.

Interface I-300



Vacuum Pump V-300



Multivapor™ P-12 with
stand-alone condenser



Sample transfer rack



Recirculating Chiller F-308

Your most important benefits

Versatile

- Compatible with a wide range of sample tubes (e.g. flasks, flat- and round-bottom tubes, falcon tubes)
- Interchangeable racks with 6 or 12 positions open the range for various needs

Efficient

- Improved efficiency by evaporating multiple samples at once
- Low operation costs due to no need of nitrogen
- Multiply your Rotavapor® in a cost-efficient way

Easy to use

- Low training efforts due to easy and intuitive operation
- Easy process control with the Vacuum Controller and its integrated solvent library
- Maximized process observation thanks to the sample visibility

Your solution «Parallel Evaporation Essential»



- Multivapor™ P-12 with stand-alone condenser
- Recirculating Chiller F-308
- Vacuum Pump V-300
- Interface I-300
- Sample transfer rack
- Options: Available also as 6 sample version, Crystal rack



- Customized application support
- Application booklet
- Workshop trainings
- Minimize downtime thanks to our service hotline
- Preventive maintenance
- Service and documentation (IQ/OQ)

"I really recommend researchers around the world to install the Multivapor™, it helps to increase research efficiency."

Dr. Kazuhiro Takagi, National Institute Agro-Envrionmental Science, Japan.

The best solution for your need

Comparison by customer needs, application and characteristics



Multivapor™

P-12

Syncore®

Polyvap

Analyst

Needs/Solutions	Page			
«Parallel Evaporation Pre-Analytical»	6			●
«Parallel Evaporation Throughput»	8		●	
«Parallel Evaporation Essential»	10	●		

Applications

Evaporation	●	●	●
Drying	●	●	●
Concentration			●
Solid Phase Extraction (SPE)			●

Characteristics

Vessel types	adaptable	fix	fix
Boiling point of solvent	< 100 °C	< 200 °C	< 200 °C
Working volume	0.5 – 240 mL	0.5 – 500 mL	5 – 500 mL
Flushback		●	●
Timer function		●	●
Inert conditions		●	●



Vacuum Pump

V-300

V-600

Interface

I-300

I-300 Pro

Recirculating Chiller

F-308

F-314

Sample processing
Multiple samples

•

•

•

•

4/6/12

•

•

•

•

(4-96)

•

•

•

•

(6-12)

Specifications

-10 °C – +25 °C

Cooling range

900 W

1400 W

Cooling capacity

1.8 m³/h

3.1 m³/h

Vacuum capacity

< 5 mbar

1.5 mbar

Final vacuum

•

•

Solvent library

•

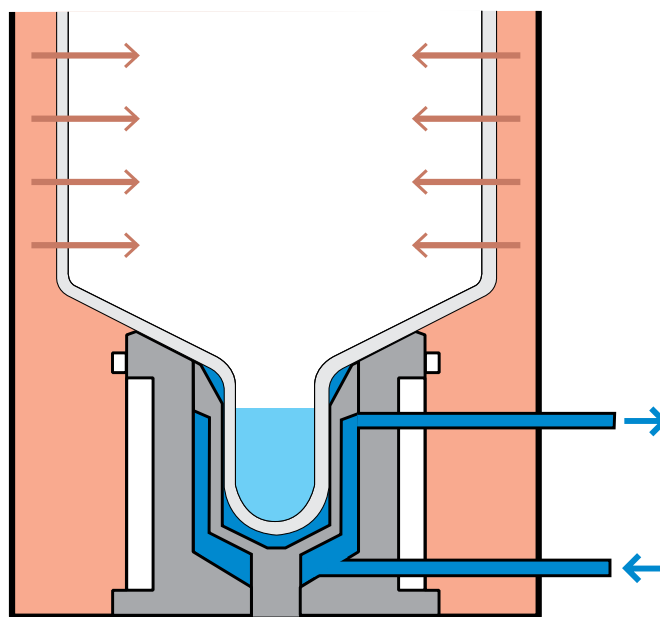
Gradient

Can I concentrate multiple samples to predefined residual volumes?

Yes, it is possible to concentrate multiple samples to a residual volume.

The Syncore® Analyst is a parallel work-up product, using three interchangeable racks to concentrate up to 12 samples down to a predefined residual volume, ranging from 0.3 mL, 1 mL to 3 mL per sample. The residual volume is collected in a water-cooled appendix at the bottom of the sample vessel. This unique design allows evaporation of heat-sensitive compounds under mild conditions.

All relevant parts of the Syncore® Analyst are chemically resistant and free of contaminants.

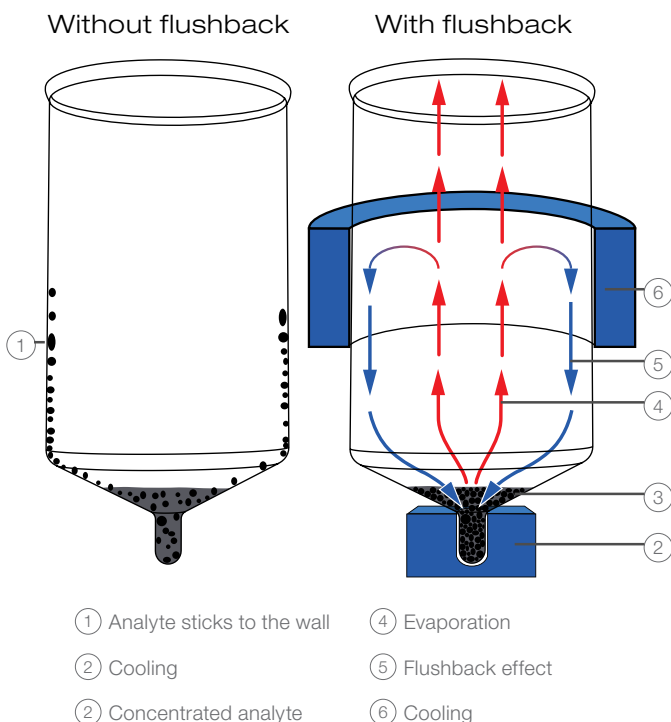


Is it possible to achieve high recovery rates?

Yes, high recovery rates can be achieved. In most analytical applications high recovery rates are essential for reliable investigations.

The flush back module for the rack R-6 and R-12 improves the recovery rate significantly by preventing valuable sample adhering to the glass walls during the evaporation process.

In addition, the evaporation process is completely observable due to the innovative crystal rack.



Can I evaporate high boiling solvents like DMF and DMSO with the Syncore®?

Yes, with the appropriate vacuum settings. An insulation kit for the Syncore® racks with 24 and 96 positions is available for higher efficiency. For best results, we recommend to use the insulation kit and the Vacuum Pump V-300 in combination with the Interface I-300 Pro.

Which chemicals can be used with the Syncore®?

All relevant parts of the Syncore® are made of high quality materials such as borosilicate glass, PTFE or EPDM, which are chemically inert and resistant against all sorts of aggressive chemicals. Most organic solvents, petro chemicals, oil and acids, such as trifluoroacetic acid (TFA) or hydrochloric acid, can be used without any restrictions.

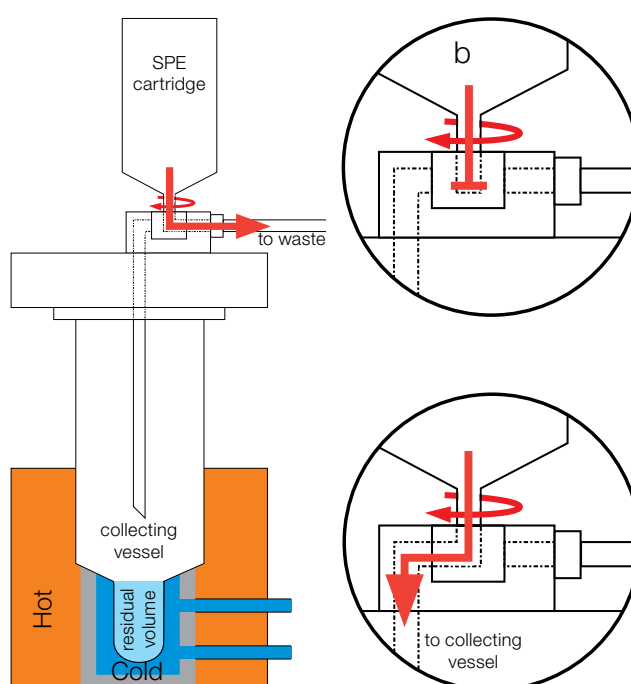
What is the advantage of an integrated SPE extraction?

Combining SPE and evaporation improves the efficiency of your sample preparation.

Conventional solid phase extraction, an essential step in many analytical procedures, includes a number of laborious steps. With the help of the modified parallel evaporator, Syncore® Analyst, all essential work-up steps including evaporation of the elutes are achieved without any sample handling between the individual steps.

The key feature is a three-way stopcock which allows separating the liquid passed through a SPE cartridge into either a waste vessel or a collecting vessel.

The eluate of the collecting vessel is then evaporated to dryness or a predefined residual volume without any sample handling between the SPE work-up stage and evaporation stage.



Vacuum Pump



The diaphragm Vacuum Pump V-300 is perfectly matching to parallel evaporation applications. It impresses with its silent and economical operation.

Interface



The Interface I-300 and I-300 Pro allow you to evaporate using pre-configured SOPs or automatic evaporation modes.

Recirculating Chiller



Sustainable cooling in accordance with economical and ecological needs is achieved with the Recirculating Chiller F-308 and F-314.

Glass assemblies



Make use of the widest range of glass condensers, flasks and vials to optimize your evaporation application.

Plastic coated glass



For maximum safety, BUCHI offers a high quality plastic coating (P+G) for virtually every glass to prevent glass shivering.

Rotary evaporation



The Rotavapor® R-300 is a comprehensive rotary evaporation solution with sophisticated operating modes to safely evaporate in up to 5 liter flasks.

Industrial Rotavapor®



Use the BUCHI industrial Rotavapor® R-220 SE Conti for continuous solvent recycling.

Melting Point



Check the purity of your compounds using the M-560 or M-565 Melting Point product for melting point or boiling point determination.

Chromatography system



The flexible Sepacore® system for simple flash purification or complete automated chromatography solutions.

Encapsulator



Encapsulate your active ingredients in a matrix for protection or controlled release using the Encapsulator B-390 or B-395 Pro.

SpeedExtractor



Optimize your extraction process with the SpeedExtractor E-914 or E-916, a parallel pressurized solvent extractor.

NIRFlex®



Near Infrared Spectroscopy is the preferred technology to complement classical fat determination with a fast screening method.



Support and customer service

From feasibility to preventive maintenance

You value an efficient and personalized service. Our network of professional application specialists and service technicians as well as a large number of satisfied customers around the world give you the assurance that you are working with the right partner.



Learn more about parallel evaporation and concentration

These application booklets are a guideline for the parallel evaporation and concentration of your specific solvent and mixtures. They summarize many years of experience and help you in finding the most efficient and safe way in operation BUCHI Syncore® and Multivapor™

Discover our literature at:
www.buchi.com/literature



Improve your applications

A team of highly qualified specialists can support you for application support. Some application notes and publications are available on our web site as examples to help you find the right configuration.

Discover our literature at:
www.buchi.com/applications



Learn about evaporation and concentration

Over more than 50 years of experience in the development of official and customized applications is summarized in practical guides. In addition, the Laboratory Assistant provides the theoretical background of essential sample preparation step as well as practical tips. Profit from a myriad of information.

Discover our literature at:
www.buchi.com/literature





Profit from workshops, trainings and seminars

We regularly offer practical seminars and workshops, often in co-operation with other partners in the field of sample preparation and analysis. Customer contributions thereby underline how our solutions facilitate the daily routine. We also attend many local and international scientific and industrial congresses.

Find an overview of our activities:
www.buchi.com/events



Use your product most effectively

We help you to set your product properly into operation. We provide thorough Installation/Operation Qualification (IQ/OQ) services to ensure compliance with FDA, GLP/GMP standards or GAMP guidelines. Whether it is because of an initial installation, requalification or relocation, we provide professional compliance verification.

Find out more about our services:
www.buchi.com/service-support



Minimize downtimes

Avoid products' downtimes with preventative maintenance and tailored service packages. We offer a product warranty of one year and guarantee ten years of spare parts availability.

Get in touch with us:
www.buchi.com/warranty



Global Network

Our subsidiaries and qualified distribution partners ensure proximity where ever you are. Since we are familiar with your requirements, we use our experience and knowledge to provide first-rate solutions.

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