



Pure Essential Chromatography System

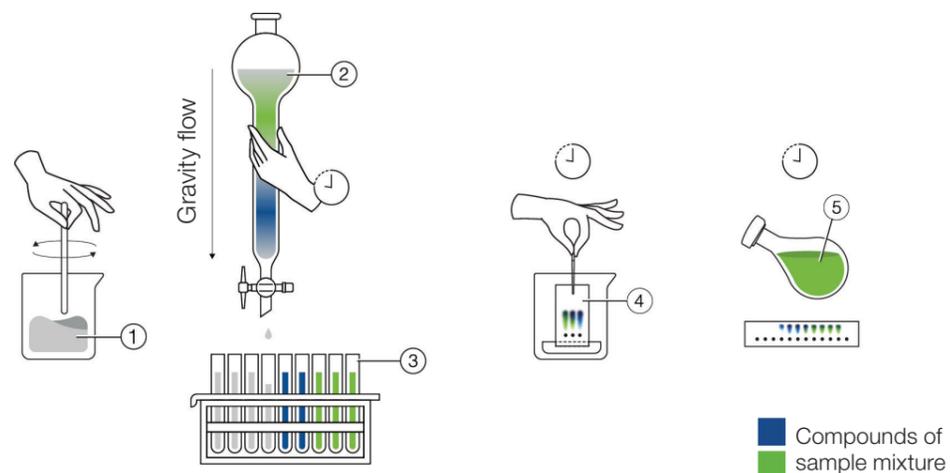
First Steps to Fast Separations



Open Column Chromatography

Where it all began

Open column chromatography (manual)



- ① Solvent mixture
- ② Open column filled with silica
- ③ Collection tubes
- ④ TLC analysis
- ⑤ Target compound

Open column chromatography was the original method used to separate mixtures into their constituents. The entire process is gravity fed and very slow when compared to modern techniques that use a pump for increased efficiency. The technique has been used for over a century and has survived the test of time due to its simplicity and relative cheapness. Nowadays, almost every aspect of open column chromatography has been streamlined and improved to enhance the workflows of modern chemistry labs.

Features of open column chromatography:

Elemental

- Tried and tested technique
- Offers a simplistic introduction to chromatography

Economical

- Low cost of entry
- Simple maintenance and setup
- Relatively cheap consumables

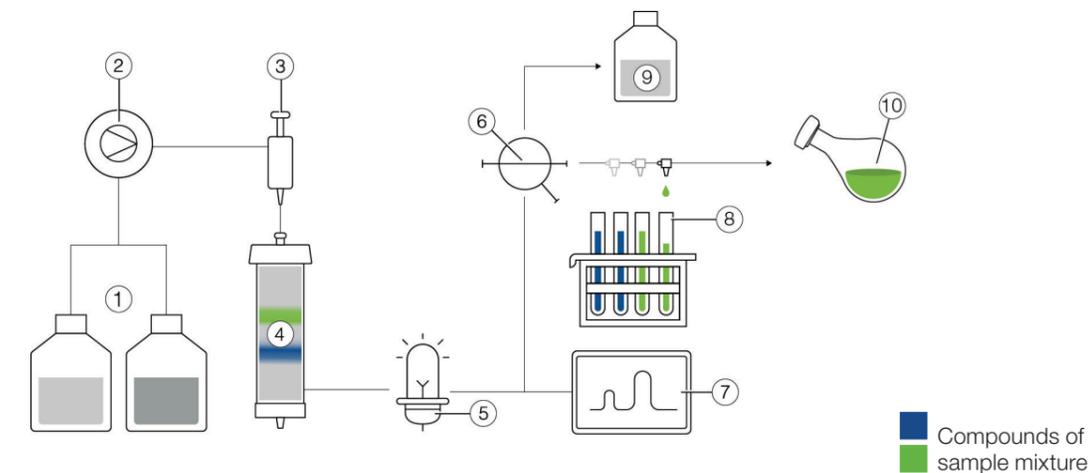
Basic

- Fume hood required
- Low flow rates and low resolution
- High solvent consumption
- Silica filling: time-consuming
- Limited flexibility and limited compatibility with consumables and detectors
- Low reproducibility due to unregulated flow and pressure

Advantages of Flash Chromatography

Speed and efficiency for the modern lab

Flash chromatography (automated)



- ① Solvents
- ② Pump
- ③ Injection valve
- ④ Flash cartridge
- ⑤ Detector
- ⑥ Waste diverter valve
- ⑦ Computer
- ⑧ Fraction collector
- ⑨ Waste
- ⑩ Target compound

Flash chromatography is a fast separation technique used to separate the compounds of synthesis or extraction mixtures. The compound of interest gets “cleaned up” or purified before it can be further studied. A pump moves the solvent and sample through the stationary phase as opposed to slow and inefficient open column chromatography. It is also known as medium-pressure liquid chromatography and has been around for decades in chemistry labs.

Advantages of flash chromatography over open column chromatography:

Fast (Flash!)

- Using a pump allows for high flow rates
- Less preparation time thanks to prepacked flash cartridges
- Automation ensures fast and reproducible progress

Efficient

- Using small particle sizes results in higher resolution
- High flow rates save time
- Less solvent consumption due to higher resolution
- Less solvent consumption to evaporate
- Compatible with a large variety of consumables and detection options

Simple

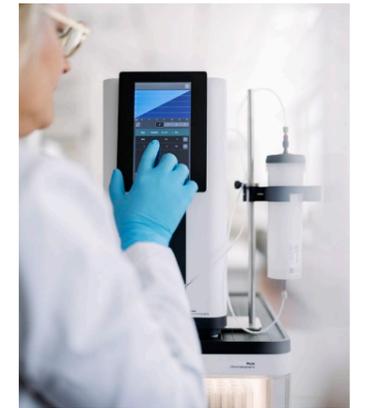
- No need for manual column packing
- Automation makes the process foolproof



Pure Essential Chromatography System

First steps to fast separations

The Pure Essential Chromatography system focuses on the essentials for any basic flash application. The design of the instrument, its modularity, and user-friendliness make it easy for you to take the first steps into automation and profit from increased speed and endless possibilities.



No-frills chromatography

Perform straightforward separations

Many flash separations only require a basic setup. At the bare minimum, a pump for smooth solvent and sample flow, and optionally a UV detector and fraction collector:

- The Pure Essential Chromatography system benefits from a basic design and setup
- The small footprint of the instrument allows for placement even in crowded labs, and its robustness makes it highly reliable
- Basic but powerful and safe thanks to a 50 bar pump, pressure sensors, and regulators

Grows with your needs

A modular and scalable solution

Every beginning is small. BUCHI supports you in every step of your research journey and offers the highest flexibility for your purification step:

- Expansion possibilities include the addition of a UV detector and fraction collector to the Pure Chromatography C-900
- There are no limits regarding the size of the collected fractions
- Additional options allow you to be flexible regarding sample loading (liquid and solid) and the cartridge holder (any size between 4 – 5000 g)

Easy to use

Plug and play chromatography

The Pure Essential Chromatography systems make flash separations easier than ever before; This is due to several key features related to the hardware and software:

- Intuitive navigation provided by novel and state-of-the-art software (methods, run data, and general settings)
- All tubing and parts of the instrument are easily accessible and allow the user to follow and monitor the process flow
- Automation simplifies the entire separation process. It supports safe and efficient operation and reduces any worries about unforeseeable events



No-Frills Chromatography

Perform straightforward separations

Many flash separations only require a basic setup. At the bare minimum, a pump for smooth solvent and sample flow, and optionally a UV detector and fraction collector.



Basic design and setup

The Pure Essential Chromatography system benefits from a basic design and setup. Ideal as an entry-level instrument and for the first steps into automation. In addition to the hardware, BUCHI developed software that allows the user to quickly and easily control the most important parameters for a run. Add-ons such as the UV detector or the fraction collector can easily be connected and automatically configured.



Small footprint and robust

The small footprint of the Pure Essential Chromatography system allows for placement even in crowded labs. The pump, incl. the UV detector, can be placed on top of the fraction collector to save space. The device benefits from a solid overall build quality with steel pump heads, extremely robust fraction collector racks, and a robust cartridge holder. Made for the rigors of daily use.



Basic but powerful and safe

Although basic, the Pure Essential Chromatography system stands out due to its power and safety. The 50 bar pump can handle any flash application, from large to small-size silica particles. Its three pistons ensure a pulsation-free flow which contributes to an efficient separation. The UV detector is highly sensitive and allows for the detection of compounds even at lower concentrations. Furthermore, the instrument is equipped with a pressure sensor and has a low susceptibility to spillage thanks to an intelligent design.



Grows With your Needs

A modular and scalable solution

Every beginning is small. BUCHI supports you in every step of your research journey and offers the highest flexibility for your purification step.



Expansion possibilities

The Pure Chromatography C-900 speeds up your separation and increases reproducibility. But at any time, you can make your separation even more efficient by adding a fraction collector and a UV detector with the following benefits: volume or UV triggered fraction collection, monitoring separation efficiency, compound detection during a run, and less solvent evaporation due to a more precise collection.



No limits for sample loading and fraction collection

The Pure Essential Chromatography system adapts to your needs. The fraction collector is compatible with many different sizes and designs of vessels: tubes, funnels, and flasks. Moreover, the user can choose between liquid and solid loading, depending on the application. Liquid samples can be injected directly via a manual injection valve or via sample loops or chambers, with volume capacities between 5 and 1000 mL.



Adapt to your applications

Applications can vary greatly in scale and complexity. With the Pure Essential Chromatography system, you are well-equipped for any application. You can connect any type of flash cartridge (sizes between 4 and 5000 g) or glass columns (ID up to 100 mm and lengths up to 900 mm) depending on the quantity of sample to be purified. An additional high-pressure mixing chamber (sizes between 2.5 to 23 mL) can be installed to mix your solvents properly, especially when using low concentrations.



Additional options

The separation of a mixture typically ends with multiple collected fractions. The concentration of these fractions can be either done via the BUCHI Rotavapor® or via vortex evaporation using the BUCHI SyncorePlus, which allows for a number of samples to be processed simultaneously. The Pure Essential Chromatography system is compatible with the same glass tubes and racks for the Rotavapor® and SyncorePlus, maximizing the efficiency of your process.



Easy to Use

Advanced chromatography simplified

The Pure Essential Chromatography system makes flash separations easier than ever before. This is due to several key features related to the hardware and software.



Intuitive handling

The Pure Essential Chromatography system can easily be installed manually, and the fraction collector and UV detector configuration get done automatically. Thanks to novel and state-of-the-art software, the system can be intuitively controlled. Only a few clicks are required to program a method or adapt parameters on the fly.



Easy accessibility

Troubleshooting and maintenance are needed every now and then when working with chromatography instruments. Therefore, all tubing and parts of the Pure Essential Chromatography system are easily accessible and allow the user to follow and monitor the process flow. Moreover, the UV detector is attached externally to the pump so the flow cell can easily be cleaned or replaced.



Automation

Automation simplifies the whole separation process, supporting safe and efficient operation and reducing worries about unforeseeable events. The Pure Essential software guides you step-by-step through the run process: priming, equilibration, sample loading, elution, and rinsing. Finally, all run data is automatically saved and available at any time through comprehensive reporting.

Consumables

FlashPure: for a wide range of flash applications FlashPure are prefilled cartridges offered in a wide range of sizes, covering different stationary phases, particle sizes and geometries. This enables the user to choose the flash cartridge which best suits his purification needs.

GlasPure: empty glass columns which can be filled by the user and therefore allow maximum flexibility in terms of scale and separation requirements. They are designed for sample amounts over 300 g and pressure up to 50 bar (725 psi).

More technical information and item numbers available here:

https://assets.buchi.com/image/upload/v1673441174/pdf/Technical-Datasheet/TDS_11595289_FlashPure_Cartridges.pdf

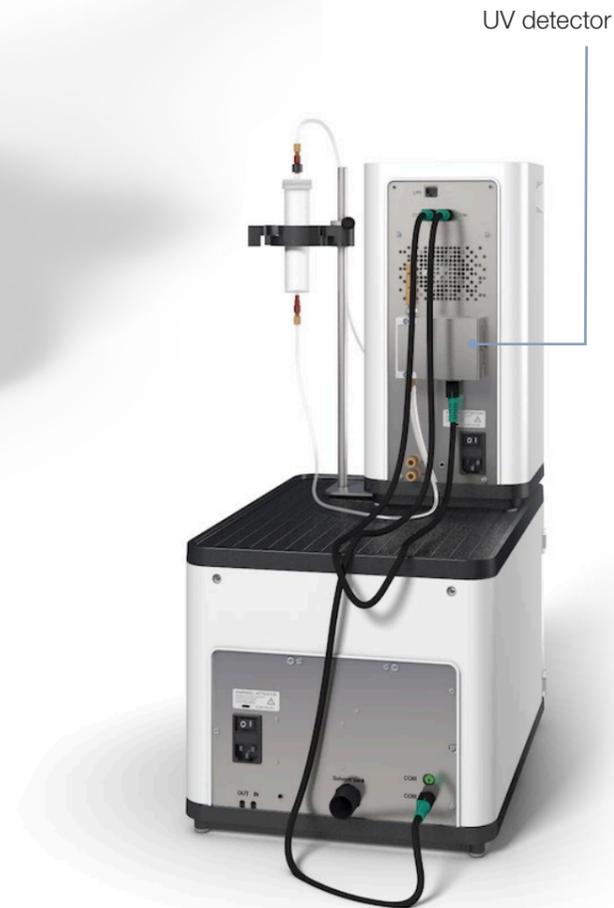
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Pure Essential Chromatography System Front view



Rear view



Pure Essential Chromatography System Configurations and benefits



	Pure Chromatography C-900	Pure Chromatography C-900 + Fraction Collector	Pure Chromatography C-900 + UV Detector	Pure Essential Chromatography System
Modules	<ul style="list-style-type: none"> 3 piston flash pump with binary gradient and a controller with novel and state-of-the-art software 	<ul style="list-style-type: none"> 3 piston flash pump with binary gradient and a controller with novel and state-of-the-art software Enclosed fraction collector with active ventilation 	<ul style="list-style-type: none"> 3 piston flash pump with binary gradient and a controller with novel and state-of-the-art software Highly sensitive 4 times fixed wavelengths UV detector 	<ul style="list-style-type: none"> 3 piston flash pump with binary gradient and a controller with novel and state-of-the-art software Enclosed fraction collector with active ventilation Highly sensitive 4 times fixed wavelengths UV detector
Item numbers	11C90000	11C90020	11C90030	11C90010
Benefits	<ul style="list-style-type: none"> Fast and reproducible separations 	<ul style="list-style-type: none"> Fast and reproducible separations Volume triggered collection 	<ul style="list-style-type: none"> Fast and reproducible separations Separation efficiency monitoring Compound detection during the run Less solvent to evaporate 	<ul style="list-style-type: none"> Fast and reproducible separations Volume or UV-triggered fraction collection Separation efficiency monitoring Compound detection during the run Less solvent to evaporate

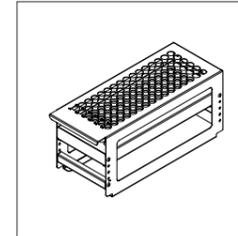


Technical Data

Method	Flash
Pump	
Pistons	3
Flow rate (mL / min)	300
Max pressure (bar)	50
Solvent lines	2
Dimension (W x D x H)	200 x 200 x 410 mm
Fraction collector	
Max. number of racks	2
Compatibility	Tubes, flasks and bottles
Dimension (W x D x H)	330 x 470 x 305 mm
UV detector	
UV wavelengths	4
UV spectra (nm)	254, 275, 325, 365
Dimension (W x D x H)	100 x 70 x 35 mm
Sample injection	
Direct liquid injection on cartridge	Standard
Liquid loop injection	Optional
Solid injection	Optional
Flash cartridge holder (\leq 330 g)	Optional
Flash cartridge holder (750 – 5000 g)	Optional



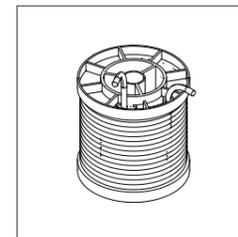
Accessories



Racks

The Pure fraction collector can be equipped with two racks and is compatible with several different-sized glass tubes, funnels, and flasks, enabling an optimal collection depending on the fraction size.

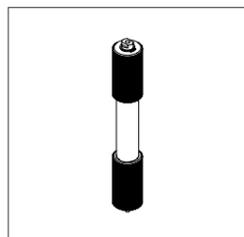
Item	Order no.
Pure rack type 1 for 12 × 75 mm glass tubes, 5 mL (1 pc)	11066672
Pure rack type 2 for 13 × 100 mm glass tubes, 8.5 mL (1 pc)	11066673
Pure rack type 3 for 16 × 125 mm glass tubes, 15 mL (1 pc)	11066674
Pure rack type 10 for 18 × 150 mm glass tubes, 25 mL (1pc)	11074055
Pure rack type 11 for 16 × 150 mm glass tubes, 20 mL (1pc)	11074056
Pure rack type 6 for 25 × 150 mm glass tubes, 50 mL (1 pc)	11066677
Pure rack type 9 for 16 × 100 mm glass tubes, 14 mL (1 pc)	11069242
Pure rack type 14 for flasks 3 × 0.5 L (1pc)	11074484
Pure rack type 13 for jars 4x 480 mL (1pc)	11074894
Pure rack type 12 for 8 funnels and 1 waste vial	11074402
Syncore rack for 16 × 130 mm glass tubes, 17 mL (1pc)	11076063



Loops and chambers

A liquid sample can be injected manually on the flash cartridge or loaded into a loop or a chamber, depending on the sample size.

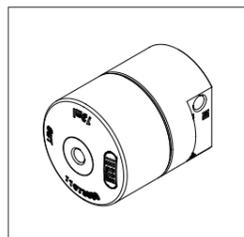
Item	Order no.
Injection valve UNF 1 / 4" – 28 (1pc)	044867
Sample chamber 100 mL (1 pc)	044853
Sample chamber 250 mL (1 pc)	054854
Sample chamber 500 mL (1 pc)	054859
Sample chamber 1000 mL (1 pc)	054864
Sample loop 5 mL (1 pc)	045222
Sample loop 20 mL (1 pc)	044852



Solid loader hardware

The Pure Solid Loader allows for easy and flexible filling of the sample in an empty tube and connection directly to the Pure Essential Chromatography system. This equipment can handle up to 50 bar (725 psi), providing maximum flexibility.

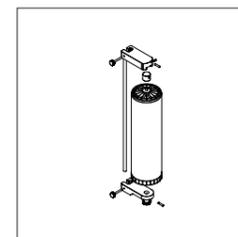
Item	Order no.
Pure solid loader S set, incl. adapter set, sleeve, tubes (20 pcs) and frits (40 pcs)	11068975
Pure solid loader M set, incl. adapter set, sleeve, tubes (20 pcs) and frits (40 pcs)	11070505
Frits S (40 pcs)	11068969
Frits M (40 pcs)	11069654
Tubes S (20 pcs)	11068971
Tubes M (20 pcs)	11069653
Insertion rod S (1 pc)	11068973
Insertion rod M (1 pc)	11070569



Mixing chambers

The Pure high-pressure mixing chambers ensure proper mixing of the solvents, especially when using low concentrations.

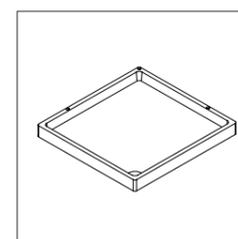
Item	Order no.
Pure mixing chamber 2.5 mL (1 pc)	11073940
Pure mixing chamber 7 mL (1 pc)	11073951
Pure mixing chamber 13 mL (1 pc)	11073950
Pure mixing chamber 22 mL (1 pc)	11075390



Cartridge holder

The Pure Essential Chromatography system can handle different flash cartridges (sizes vary between 4 and 5000 g) or glass columns (ID up to 100 mm and lengths up to 900 mm) depending on the quantity of sample purified.

Item	Order no.
Pure Essential stand for flash cartridges (4 – 330g) (1pc)	11072733
Pure clamp for flash cartridges (4 – 330g) (1pc)	11074604
V-Stand with rod (950 mm) for flash cartridges (800 – 5000 g) and glass columns (1pc)	11069158
Holder for flash cartridges (800 – 1500 g) (1pc)	11058737
Holder for flash cartridges (3000 – 5000 g) (1pc)	11065862
Pivot clamp for glass columns ID 15 mm (1pc)	044857
Pivot clamp for glass columns ID 26 mm (1pc)	044858
Pivot clamp for glass columns ID 36 mm (1pc)	044859
Pivot clamp for glass columns ID 49 mm (1pc)	044860
Pivot clamp for glass columns ID 70 mm (1pc)	044861
Pivot clamp for glass columns ID 100 mm (1pc)	044862



Solvent platform

The Pure fraction collector can be equipped with an extra solvent platform on top which provides space for four bottles. This allows for better use of available space and reduces risk of spills.

Item	Order no.
Pure Essential solvent bottle platform (1pc)	11075721

The Complete Chromatography Portfolio

Overview



Pure Essential Chromatography System



Pure C-805

Pure C-810

Pure C-815

Description	A modular flash LC instrument for basic applications.	Flash LC instrument portfolio with a wide range of detection solutions.		
Type of Chromatography				
Liquid	•	•	•	•
Supercritical fluid	-	-	-	-
Pump mode				
Flash	•	•	•	•
prep HPLC	-	-	-	-
prep SFC	-	-	-	-
Detector				
UV	• (4 fixed wavelengths)	•	-	-
DAD	-	-	•	•
ELSD	-	-	-	•
MS	-	-	-	-
Consumables				
Flash cartridges 4 – 5000 g	•	•	•	•
prep HPLC or SFC columns 4 – 16 mm ID	-	-	-	-
prep HPLC or SFC columns 15 – 30 mm ID	-	-	-	-
prep HPLC or SFC columns 30 – 50 mm ID	-	-	-	-
prep HPLC or SFC columns 70 mm ID	-	-	-	-



Pure C-830



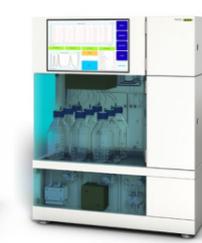
Pure C-835



Pure C-850



Sepiatec SFC-50



Sepiatec SFC-250



Sepiatec SFC-660

Description	Prep HPLC instruments with different detection possibilities.		A dual instrument for flash LC and prep HPLC applications.	Prep SFC instruments that differ in compatibility with different column sizes.		
Type of Chromatography						
Liquid	•	•	•	-	-	-
Supercritical fluid	-	-	-	•	•	•
Pump mode						
Flash	-	-	•	-	-	-
prep HPLC	•	•	•	-	-	-
prep SFC	-	-	-	•	•	•
Detector						
UV	-	-	-	-	-	-
DAD	•	•	•	•	•	•
ELSD	-	•	•	Optional	Optional	Optional
MS	-	-	-	Optional	Optional	Optional
Consumables						
Flash cartridges 4 – 5000 g	-	-	•	-	-	-
prep HPLC or SFC columns 4 – 16 mm ID	•	•	•	•	-	-
prep HPLC or SFC columns 15 – 30 mm ID	•	•	•	-	•	-
prep HPLC or SFC columns 30 – 50 mm ID	•	•	•	-	-	•
prep HPLC or SFC columns 70 mm ID	•	•	•	-	-	-



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- Product installation and testing
- Hands-on training from a certified technician
- Evaluation of the immediate surroundings of your new product
- Best integration of your new product into the existing infrastructure

«IQ / OQ»

- Product or system installation
- Installation and Operational Qualification

BUCHI EXACT - Certified accuracy for highest level of confidence

Receive comprehensive qualifications with all of your BUCHI products. We perform qualification services on a level that can only be achieved by the manufacturer. www.buchi.com/exact

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- The service team will remind you about the option for a follow-up OQ before the certificates expire.

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Buying an OQ package will grant you an additional discount on the documents and offer you priority service with automated visit scheduling.

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Maintaining a heavily used device requires different parts and inspection frequencies than units that are operated occasionally. Our approach takes factors like these into consideration to provide you with an optimal yet cost-efficient solution. www.buchi.com/care

BUCHI ACADEMY - Increase your know-how, get the edge over your competition

Expert know-how is provided by the application chemists in our competence centers in Flawil, Beijing and Mumbai and the locally available experts at our market organizations. Our scientific support offers pre-sales feasibility studies, tailored solution offers, after sales onsite support, regular basic to advanced courses and on demand customized training.

www.buchi.com/academy

Core messages to our customers

BUCHI creates added value

“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.



Competent

We have the technological expertise and decades of experience needed to provide competent support and work with you to continually improve our services.



Reliable

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.



Safe

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.



Cost-effective

We strive to create a high level of economic benefit and maximum added value for you.



Global

As an international family-owned business with own subsidiaries and qualified distributors, we have a presence wherever you are located.



Easy

We support you by providing carefully designed solutions as well as instruments and systems that are easy to operate.



Sustainable

We support environmentally friendly processes and manufacture products that have a long service life. We utilize advanced technologies to leave the smallest environmental footprint possible.

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Quality in your hands

