

THE WORLD'S PUREST WATER



Berrytec®

**ULTRAPURE WATER
UNDER PROTECTIVE
GAS FILLING**

BERRYPURE® SGK-ULTRA

THE WORLD'S ONLY BERRYPURE® IR-CONTROL WITH PROTECTIVE GAS FILLING UNDER ARGON FOR THE BEST ULTRAPURE WATER

Berrytec is an innovative company specializing in pure and ultrapure water systems for laboratories and research.

With our new patented **berrypure®** protective gas system with IR control, we can monitor environmental parameters before filling your bottle with ultrapure water and fill it under ARGON atmosphere. After the dispensing process we achieve a water quality up to 70% better than comparable systems. Here we set new standards for ultrapure water.

There are countless producers of ultrapure water systems worldwide and most of them offer good quality within the physically measurable limits of 0.055µs/cm or 18.2MΩ.

Depending on the equipment and requirements, the systems are offered in a price range of 3,000 - 15,000 €. Some are more economical in purchase, but more expensive in consumables.



But they all have one thing in common, the quality of ultrapure water they offer always refers to the mentioned parameters in the internal cycle of their systems!

Ultrapure water is not only an increasingly important medium in modern analytics, it also demands better values than the measurable. This means that although a value of 0.054µS/cm or 18.2MΩ is displayed, the ultrapure water can still contain measurable ions. This can have two reasons. The good product is not good enough or there are further disturbing factors during the filling process.

Today, for example, the measurement accuracy in modern ion chromatography is less than 0.1µg and better. It is therefore possible that more and more users are confronted with or already have problems with their ultrapure water.

It is all the more astonishing that no one has thought about it when the ultrapure water leaves the protective environment of the system and is filled into a bottle of its choice.

Very few laboratories in the world today have a clean room atmosphere in which to work, and this is exactly where the problem begins. In our modern industry with its conurbations, where the brain pool for modern research is located, even the air is not always the cleanest. This is usually contaminated with a large number of aerosols and particles of all kinds, in addition to contamination from everyday laboratory life.

In our experiments we have been able to observe incredible effects with a nasal spray, which was used carelessly in the laboratory. The ultrapure water system in the room showed an increased chloride value after filling into a PVDF bottle.

There are many limit values, for example, the amount of particulate matter in the room air must not exceed 50mg/m³. In addition, however, there are many other foreign substances.

For all non-scientific readers of this article it should also be said that this ultrapure water is still highly active in binding and especially greedy for the absorption of ions and substances of all kinds when it has left the „protected cycle“.

This also supports micro turbulence at the outlet of the final filter, no matter how gentle it may be. The effects here are similar to those of a water jet pump, which sucks in and combines a veritable flood of laboratory air.

Berrytec® has been dealing with this topic in particular since its foundation and has developed and patented a sophisticated system for clearly measurable reduction.

Berrytec® produces laboratory pure and ultrapure water systems up to 500 litres capacity / hour in a wide variety of designs and sizes. We pay attention to functionality and quality.

Our patented „Easy“ dispensing arm made of solid aluminium is an important step in the development of our new **berrypure®SGK Ultra** ultrapure water system. Our system is able to be placed on the bottle neck of a laboratory bottle, e.g. GL45, and to fill up the ultrapure water after atmospheric control under argon protective gas.

We will proceed as follows:

The „room“ air in your bottle is sucked via a lance to our infrared measuring unit, while the 2nd lance blows the argon protective gas into the bottle. The process takes about 30 seconds (depending on your indoor air quality) and during this phase we measure gases such as Carbon dioxide, nitrogen and particles via the IR module. These are displayed as added sum parameters in ppm.

The initial and final values are compared and released for filling from a specified limit value.

The ultrapure water flows from the sterile filter under the argon atmosphere into the bottle. In addition, we also reduce the carbon dioxide, which is a problem in many analytical processes, by 0.04% (depending on the

set limit value). Your bottled ultrapure water from our **berrypure®SGK Ultra** does not come into contact with your laboratory air due to the comparatively high weight of the argon gas. With appropriate handling, you have an argon protective atmosphere up to the bottle neck after closing your bottle.

The measured values result in up to 70% better quality of your ultrapure water than filled in the conventional way.

Argon is a neutral, harmless gas, which already exists up to 1% in the air, it is already available in most laboratories and can be conveniently connected to our system.

If you do not have your own argon supply, we can offer you small, handy pressure cans where you have a corresponding quality of argon at your disposal.

Of course, our **berrypure®SGK Ultra**, as well as some of our other systems, has a variety of useful control parameters, including documentation according to GMP, to help you optimize your everyday life.

Now you can decide whether you want to take the next step and increase your high quality standards together with Berrytec®.







Our Easy Dispenser for protective gas filling

The dispensing unit: Our Easy-Dispenser arm is made of aluminium, height-adjustable, suitable for all your vessels by means of a counterweight mechanism. Base area only T 440 x W 280 x H 520 mm!

It is therefore individually adjustable to your desired filling height of 100-600 mm. You can even fill canisters with a volume of up to 25 litres comfortably under it.

Adjustment or locking is not necessary.

All UP-class models are delivered with our Easy-Dispenser arm! The only exception is the UP-Class Easy, where the arm is mounted on the side.

It was a special concern to us that the removal is as easy as possible and always adaptable to your vessels. Our Easy-Dispenser is also available as a wall-mounted model, up to integration in a media cell in your laboratory.

The housing: Our housing is available as table, wall or undertable model! (due to its solid aluminium construction we do not need a separate hand holder). As a special

highlight, a choice of colours for your housing is available for an extra charge (standard colours RAL5002 blue or white). Your housing is thus sealed with a high-quality powder coating.

Dispenser: Up to 3 further remote dispensers are possible with the touch panel control (optional) (not in combination with protective gas at several positions).

Volume dosing 0.01-99.9 litres: This is monitored by an integrated impeller anemometer. This can be calibrated and is highly precise with a deviation of max. 1.2%.

TOC value <2.0 ppb: (with UV and feed water via osmosis, or EDI and feed water <50ppb)

For an additional charge, you can use our TOC-online Monitoring System to monitor the value on your display and have it documented internally. (standard with SGK-Ultra)

Documentation module: With our documentation module (standard with SGK-Ultra) all values are automatically stored.



You can personalise the takeout with a password and each takeout is recorded with date, time, water quality during dispensing and status of the system.

Network connectivity: With our network module (option), we can also integrate the system into your in-house network.

Please give us your network data so that we can check the connection.

Recirculation: We recirculate permanently! via a second Nano/PEEK special pump (no heating of the water by magnetic coupling slow flow of 500 ml/min) to maintain the flow in the system.

This prevents the formation of germs and you always will have the best water quality. The displayed value on our displays is therefore guaranteed to be reproducible in real time!

Recirculation up to the valve chamber in the dispenser arm.



Berrypure® IR-Control System



quality and low TOC values.

Control: The 7" large touch panel leaves nothing to be desired when it comes to operation, simple and intuitive.



Automatic interval switching of the feed pump, adjustment and monitoring of all possible limit values, e.g.: Input conductance, water quality, cartridge change, cartridge status, drop function, and much more.

Flushing: integrated discard flushing for the ultrafiltration module (if available on UF models)

Endotoxins: Ultrafiltration module for endotoxin values in EU/ml 0.001

Disinfection: Integrated disinfection module for disinfecting your system. Saves costs and ensures the quality of your system and ensures low TOC values.

UV lamp 185 nm and 254 nm, automatic switch-on at removal

Flow rate at least 2.0 Ltr./min. with supply via corresponding pre-flow pressure.

Feed water: Inlet pressure up to 6 bar, without separate pressure reducer. With a feed water of <math><1-5\mu\text{S}/\text{cm}</math> up to 60,000 liters lifetime of the filter cartridges. The supply is possible with an input value of up to

Cartridges and sterile filters: Cartridges and sterile filters are easy to change from the front. The cartridges are registered by an RFD chip in the system after the change. From this point on, the lifetime monitoring runs automatically and is displayed in the system with the colours white/orange and red. The exact service life can also be queried in the menu.

Long service Life: Due to 2 different DUO Pak`s, application-specific Pak`s are available for best water

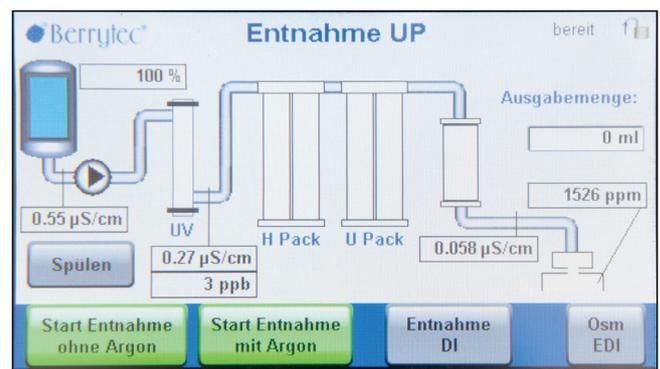
Protective gas filling: Our berrypure®SGK-Ultra has the following functions:

You place your bottle under the filling bell and enter the desired volume, e.g.: 1000ml, you press start, immediately the system begins to suck in atmosphere via a lance and to monitor and measure the values in the integrated IR module.

At the same time, ARGON is filled with the second lance in predetermined pushes and thereby displaces the air in the bottle.

The filling process is monitored until there is a specified amount of ARGON protective gas in the bottle. A total parameter value in ppm of residual gases, such as e.g.: carbon dioxide is displayed.

The filling process is started.



Due to the relatively heavy argon, a residual gas coating is achieved after the process has been completed and you thus have an optimum quality of ultrapure water in your bottle.

This allows you to use your ultrapure water in even better quality with the sealed bottle. With the berrypure®SGK-Ultra ultrapure water system you can improve the output quality of your water by up to 70%.



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