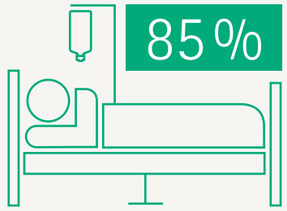
Ecoflac® plus

The Closed System IV container designed for efficient and convenient IV therapy procedures - From drug admixture to drug delivery

B BRAUN
SHARING EXPERTISE



More time
for patient care



With at least 85 % of hospital patients receiving an intravenous therapy treatment,[1] infusion therapy is a fundamental and irreplaceable part of patient care and an integral part of the daily clinical processes of health care workers.

The impact of risks associated with infusion therapy on the well-being of both patients and healthcare professionals is frequently underestimated and can represent a substantial financial burden for hospitals.

More vs. Less

Time		Process steps
Simplicity		Products
Piece of mind		Risks

With WHO projecting a shortfall of 10 million health workers by 2030,[2] we are well aware of your daily challenges. Therefore, we focus all our efforts on bringing simplicity to your infusion therapy workflows and helping you achieve peace of mind during medication preparation and delivery.

With B. Braun´s extensive IV Therapy portfolio, including ready-to-use (RTU) IV solutions, we offer a time saving and cost-efficient system – **for more time for you and your patients.**



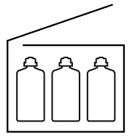
Table of Content

Product design	4
Closed System	6
Label concept	8
Sustainability	10
Protective Admixture Tools	12
IV Solutions Portfolio	14
B. Comp Compatibility Database	16
Literature	17

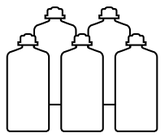
Ecoflac® plus – Inspired by daily practice

Designed for simple and safe handling

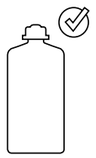




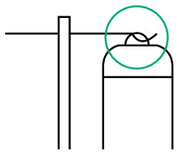
Easy to open and access
The Ecoflac® plus carton box has an integrated dispenser feature which allows easy opening without scissors or sharp instruments, reducing the risk of injury and of damaging the contents.



Easy to store and count
Ecoflac® plus can be stored upright or horizontally. This allows to optimize the space in the storage area and to facilitate inventory management.



Easy to handle
Ecoflac® plus design combines lightness and robustness. As a standable IV container, it offers more stability while handling, both during drug admixture procedures or while connecting the IV administration set. Unlike glass bottles, it is virtually unbreakable, helping to reduce the risks of contamination and spillages in case of accidental drop.



Easy to hang
Ecoflac® plus can be hanged easily thanks to its large integrated hanger.

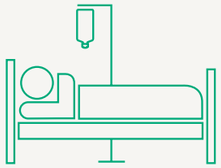
Designed to meet your needs in…



Logistics

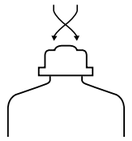


Pharmacy



Ward

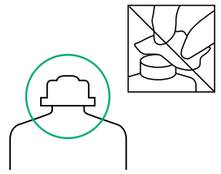
Benefits of the Twincap port system



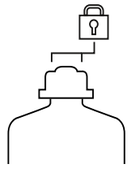
No additional time needed for the identification of the correct insertion site to use
The two separated access ports are identical and can be used interchangeably for drug admixture or delivery.



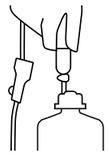
Designed for easy handling and stabilization
The large neck ring area around the Twincap is made of puncture resistant plastic to help prevent needle stick injuries or inadvertent piercing of the container, in case needles are used.



No need to disinfect the port system
Both ports of Ecoflac® plus are kept germ-free until removal of the two sealant aluminum foils. This avoids the additional disinfection step. Once removed, the absence of the protective foil becomes a tamper evidence element of the used port.



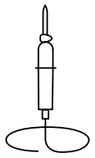
Resealable ports for reduced contamination risk
The elastomer of the Twincap access ports automatically reseals after needle or IV set spike removal, reducing the risk of potential uncontrolled leakage. The material of the elastomer is designed to remain integer when the ports are pierced.



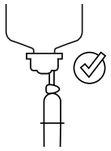
Easier handling while spiking
The properties of the resealable port membrane also prevent coring of elastomeric particles when pierced.

Twincap Port System





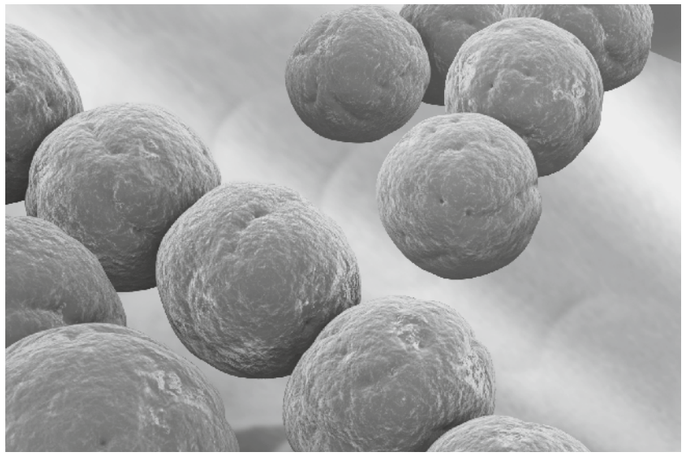
Universal compatibility with IV sets
The Ecoflac® plus Twincap port system is universally compatible with all common IV administration set spikes.

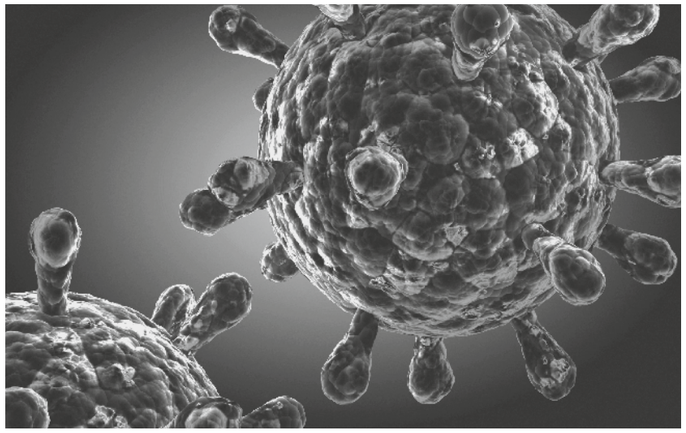


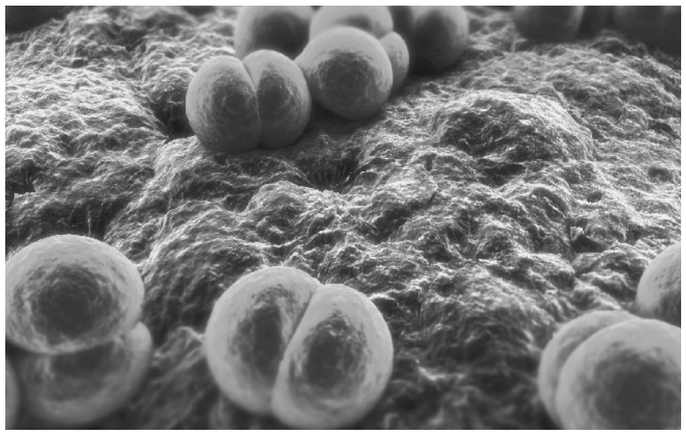
Tight connection to avoid accidental disconnection
The port system of Ecoflac® plus offers a firm connection between the IV set spike and the IV container, helping to avoid any potential spike disconnection, which could result in serious patient risks.

Closed System

Improved safety for your patients







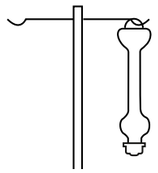
The potential risk of open system IV containers
Intravenous fluid containers can be separated into two different categories: open system containers and closed system containers.[3] Open system containers must be externally vented to allow the IV container to empty, providing an opportunity for bacterial entry.[3] This is the case e.g. with glass bottles or non-fully collapsible semi-rigid IV containers.[4] According to the WHO, 1,4 million people worldwide suffer from infections acquired in hospitals.[5] These infections are caused by microbiological pathogens present in the hospital environment and are important contributors to morbidity and mortality for hospitalized patients. The use of open system IV containers represents a higher risk for microbial contamination, since they have to be externally vented.

Closed system IV containers
Closed infusion containers are fully collapsible plastic IV containers which do not require external venting to empty.[3,4,6]

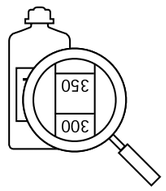
Closed systems have been shown to significantly reduce the incidence of Central Line associated Bloodstream Infections (CLABSI) resulting from the ingress of external air into the IV container.[3,4,6] Moreover, literature has shown that switching from an open to a closed system IV container resulted in an overall reduction of CLABSI rates by 67 %.[4] The introduction of closed infusion systems not only reduces CLABSIs but also reduces attributable hospital costs and mortality.[6]

Closed system IV container
The design of the Ecoflac® plus allows the IV solution to be completely administered without the need of venting, helping to reduce the risk of microbial contamination.

CLOSED SYSTEM



Constant flow rate
The flow rate remains constant to help facilitate infusion to run according to prescription.

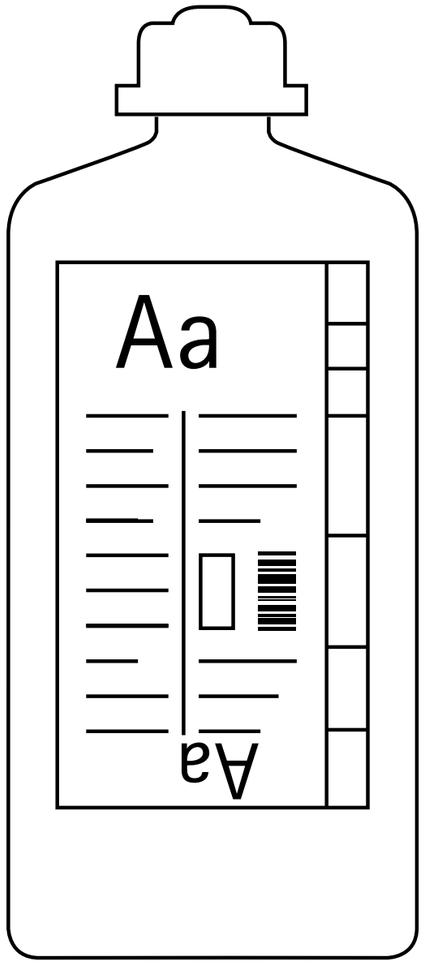


Logarithmic graduation scale for infusion monitoring
The logarithmic graduation scale on the Ecoflac® plus label is designed to follow the collapsing behaviour of the IV container when used in unvented conditions, allowing the continuous monitoring of the administered volume.



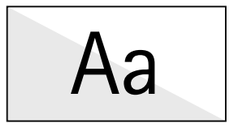
Safety at first sight

A label designed to reduce identification errors



Aa

Clear color codes and large text
The use of color eases distinguishing the different solutions names. Large size text helps in identifying the critical information at a glance. The solution name can be read also during administration when the IV container is hanging on the infusion pole.



Geometric design for alert drugs
Geometric shapes, such as triangles, are used to create a differentiating element between high alert medications and standard solutions which have linear design labels.



Differentiating contrasting background
Contrasting backgrounds are also used for a better differentiation of concentrated solutions.

Medication error: causes and consequences
Medication errors occur in prescribing, dispensing or administering of a drug, irrespectively of whether such errors lead to adverse consequences or not.[9,10]

Depending on the drug in use and the specific factors of each individual case, errors and irregularities in IV drug preparation and administration can have a broad range of consequences ranging form harmless to fatal.[11]

Globally, the cost associated with medication errors has been estimated at US$ **42 billion** anually or almost **1%** of total global health expenditure.[12]

B. Braun safety labelling concept
Incorrect drug selection is a common dispensing error which may be caused by similar drug labels / packaging.[9] Research showed that clear labels, based on strong visual differentiation between high alert medications and standard solutions help reduce medication error.[7,8]

Based on these findings, B. Braun's unique safety labelling concept helps reduce the risk of medication errors cased by look-alike labels. The concept has been developed with clinical experts and is based on the aspects shown on the left page.



Material matters

Ecoflac® plus is manufactured free of harmful chemicals and softeners

The risk of PVC and DEHP in IV containers

IV containers made with Polyvinyl Chloride (PVC) can have negative effects on IV medication delivery and compromise the patient receiving the required amount of IV medication as some drugs tend to interact and sorb to PVC infusion containers, leading to a loss of pharmacologically active compounds. Examples of drugs lost from aqueous solutions during infusion from a flexible PVC container include: Calcitriol, Carmustine, Diazepam, Heparin sodium, Isosorbide dinitrate, Lorazepam, Nitroglycerin, Warfarin sodium.[13] Other materials such as polyethylene (PE) show no or a significantly lower sorption effect compared to PVC. If the PVC IV containers contain the plasticizer DEHP, this can be released into the medication when in contact with certain drugs (leaching). DEHP has been shown to produce a wide range of toxic effects, particularly in male neonates where the infant's reproductive system can be compromised. In fact, the European Union classified DEHP as a Category 2 reproductive toxicant for both fertility and developmental effects.



PE

High drug compatibility

Ecoflac® plus is made of a pure medical grade polyethylene (PE) which is chemically inert and toxicologically safe. PE is a flexible and resistant material which provides compatibility with most pharmaceuticals, reducing the risk of interactions.

PVC

Free of PVC & DEHP

Ecoflac® plus and its port system are not made with PVC to avoid errors in dosage due to absorption of the drug to the container material. As Ecoflac® plus is also not made with DEHP, its endocrine disrupting properties that may be harmful to human and environmental health are avoided.

LATEX

Absence of latex

Ecoflac® plus incl. the port system is not made with latex, to prevent any allergic reactions for both the user and the patient.



Environmental impact of PVC incineration

Most of the medical waste is subject to incineration. Disposal of PVC via incineration is associated with the formation and release of dioxin, a group of persistent and very toxic chemicals that are released in the air. Dioxins persist in the environment and accumulate in the food chain, resulting in measurable revels in animals and in human tissues.[14]

PVC therefore creates a number of environmental health risks. By choosing products not made with PVC such as Ecoflac® plus, you can help eliminate potential toxins and other safety hazards that could affect your staff, your patients and the environment.

Find out more about sustainability with Ecoflac® plus.

No toxic emissions

Ecoflac® plus container is made of polyethylene which, like all hydrocarbons, burns cleanly. When incinerated under standard industrial conditions, the container biodegrades completely and residue-free into the natural elements of our environment, water and carbon dioxide.

Save waste, save costs

Unlike flexible bags, Ecoflac® plus has no outer packaging and thereby produce a lower amount of waste. It is also much lighter than glass containers.

Focus on recyclability

In Ecoflac® plus materials and additives for which recycling schemes are unlikely to be established are avoided wherever possible. Moreover, B. Braun uses transport boxes made of up to 85 % recycled paper as well as recyclable paper-based shipping tape, dispenser boxes and labels.

Clever connections

For improved efficiency and safety in your drug admixture workflows



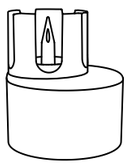
More safety in less time



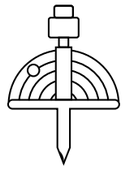
Ecoflac® Connect is a dedicated needle-free transfer device for single dose medication vials. As a closed system, it aims at reducing contamination of medication and exposure to potentially toxic medication. The fact that the vial remains connected with the system all along the infusion reduces the risk of medication error.

- Saves 1/3 of the preparation time*[16]
- Saves 1/3 of the preparation steps*[16]
- Eliminates the risk of needlestick injuries*[16]
- Reduces the risk of microbial contamination*[16]

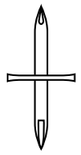
* Compared to preparation with needle and syringe.
Source: British Journal of Nursing, 2023



Ecoflac® Mix
Ecoflac® Mix is a dedicated transfer cap for transferring fluids between an Ecoflac® plus container and a single dose medication vial. It provides a stable connection between the container and the vial and is especially designed to be used with Ecoflac® plus.



Mini-Spike®
Mini-Spike® is a needle-free vented dispensing pin for injecting and withdrawing fluids from vials or semi-rigid containers. It integrates a swabable valve which automatically closes upon syringe disconnection.



Transofix®
Transofix® is a transfer spike for large containers. Thanks to its wide internal diameter, it allows improved flow even with non evacuated glass vials. It is needle-free to prevent any risk of needlestick injuries. The broad grip flanges provide an ergonomic, good grip for easy handling.

For more information on time saving with the use of Ecoflac® Connect, please scan the QR-Code.



Despite several regulations calling for employers to ensure that the use of sharps is avoided in favor of safer alternatives, a large number of drug preparations on the ward continues to be performed manually using the needle-and-syringe method.

A recent survey of more than 7,500 Royal College of Nursing (RCN) members showed almost all nurses (89%), especially senior nurses, perceived risks with current procedures for reconstitution of IV doses, being the most commonly mentioned area of concern needlestick injuries (NSI).[15]

Furthermore, NSIs are often not reported so the true frequency may be appreciably higher. B. Braun needlefree transfer devices eliminate the risk of NSI and therefore represent safer, and time-saving solutions for the healthcare workers.[15]

Ecoflac® plus – an extensive solution portfolio

To fulfill your clinical requirements



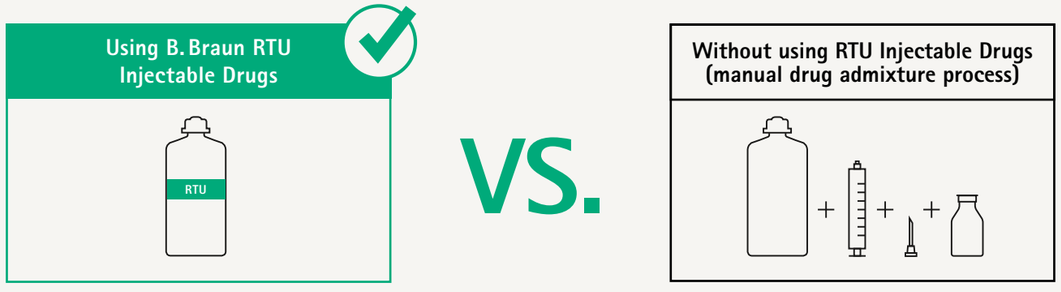
50 ml | 100 ml | 250 ml | 500 ml | 1,000 ml

- Standard IV solutions
- Plasma volume replacement
- Ready-to-use anti-infectives
- Ready-to-use analgesics
- Ready-to-use sedatives
- Ready-to-use potassium

Ready-to-use drugs

The Council of Europe recommends that ready to use formats are to be used, if a suitable pharmaceutical equivalent with a marketing authorization is available.[17] Before preparation, the pharmacist should verify whether a pharmaceutical equivalent is available on the national market, taking into consideration the pharmaceutical form and strength.[17]

Products needed



The use of ready to use solutions increases patient and healthcare professional safety by:

- Providing higher accuracy of dosing and contributing to the prevention of medication errors.
- Reducing the risk of particle infiltration and contamination of the solution during preparation.
- Reducing the risk of sharp injuries thanks to the elimination of the use of needles.

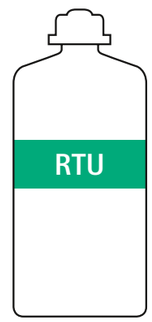
Increase patient safety

Increases patient safety by reducing the risk of medication and dosage errors. RTU requires less manipulation and therefore reduces the risks of contamination.

More time for patient care

By reducing the overall preparation time and material costs required for admixing drugs, ready to use solutions provide you with a good cost efficacy ratio administering drugs.[18]

All you **need** ...



... all you **save.**

Save Time

Save up to **1/3** of the preparation time

equal to saving **36 seconds** and **6 steps** compared to the standard manual drug admixture procedure[1]

Save up to **110 seconds** of the preparation time

by eliminating **18 steps** of the standard manual admixture process[1]

Save Products

Eliminate the use of **needles and syringes**

Eliminate the use of **needles, syringes and medication vials**

Reduce Risks

Reduce the **risks** connected to the manual drug admixture process

- Chemical contamination
- Needlestick injuries
- Microbial contamination
- Medication error

B. Comp

Easy access to compatibility information



Compatibility database B. Comp
B. Comp offers an easy and intuitive digital access to compatibility data of selected drugs with B. Braun products such as Ecoflac® plus.

in-depth compatibility information
The B. Comp database includes a variety of drugs and drug concentrations tested in different storage conditions and with different carrier solutions.

Independent certified laboratories
Stability / Compatibility data are based on test results of independent certified laboratories. Lab reports can be downloaded and are regularly updated.

Ask for B. Comp access
For more details, do not hesitate to contact your local B. Braun representative, apply for access to B. Comp via My B. Braun or visit our website:

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Notes

B. Braun Melsungen AG | Hospital Care | 34209 Melsungen | Germany
Tel. +49 5661 71-0 | www.bbraun.com

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