

b.safe Caps GL45

b.safe Caps GL45 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles and canisters with GL45 thread.

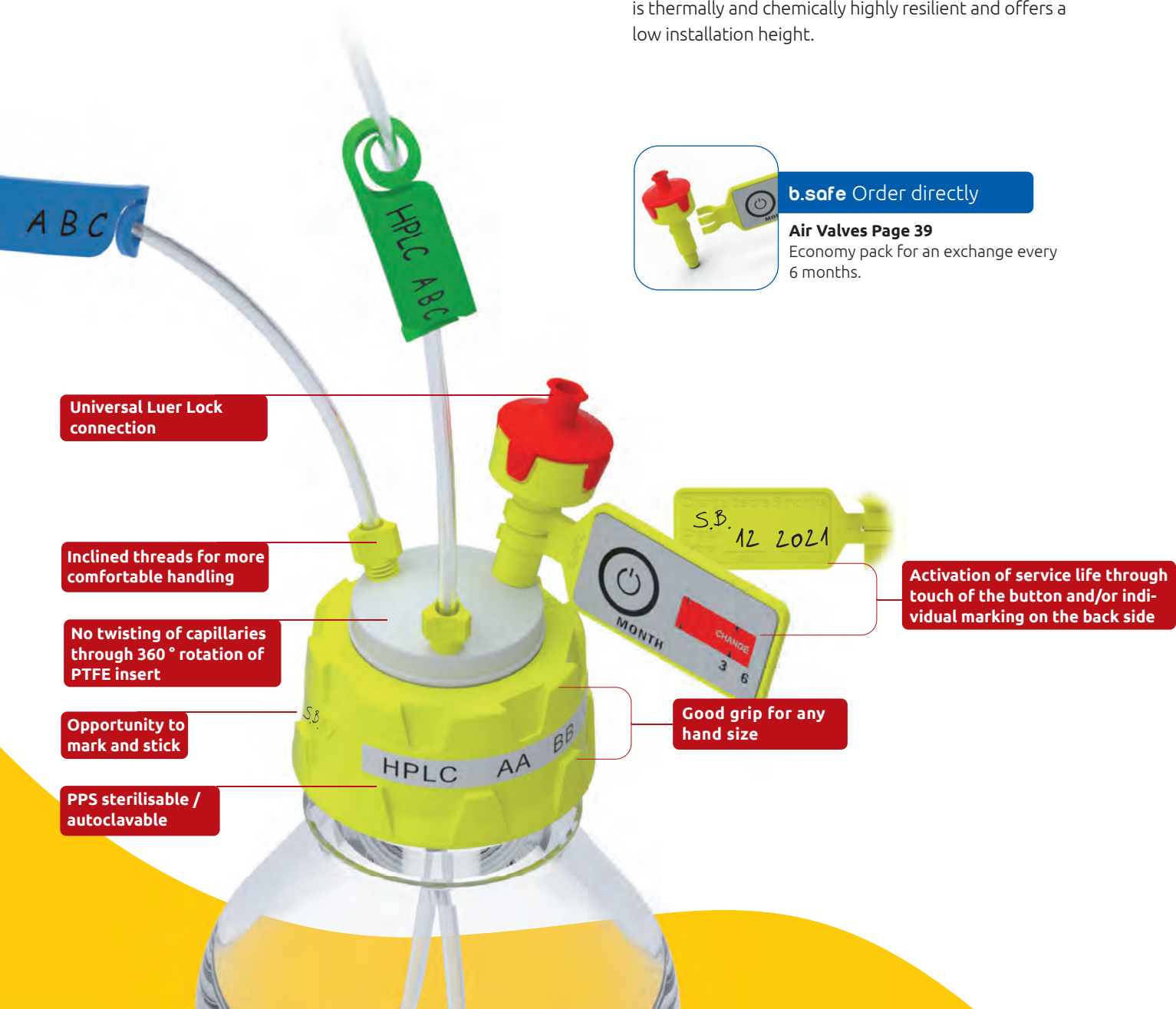
With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GL45 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances on the bottle neck. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



Universal Luer Lock connection

Inclined threads for more comfortable handling

No twisting of capillaries through 360° rotation of PTFE insert

Opportunity to mark and stick

PPS sterilisable / autoclavable

Good grip for any hand size

Activation of service life through touch of the button and/or individual marking on the back side



b.safe Order directly

Air Valves Page 39

Economy pack for an exchange every 6 months.

b.safe Caps **GL45**

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for GL45 thread, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (thread UNF 1/4" 28G), blind fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 mm (yellow)	0 (milky white)	M 145-01
B	2	2 x Ø 3,2 mm (yellow)	1 (milky white)	M 145-02
C	3	3 x Ø 3,2 mm (yellow)	2 (milky white)	M 145-03
D	4	4 x Ø 3,2 mm (yellow)	3 (milky white)	M 145-04
E	6	6 x Ø 3,2 mm (yellow)	5 (milky white)	M 145-05

Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



Bottle thread GL45 (DIN168)

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Space-saving Caps



The special clou of b.safe Space-saving Caps: their lateral threads for the connection of capillary tubing and the air valve. Thus the installation height can be easily reduced if the available space is limited in regards to the height.

With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GL45 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

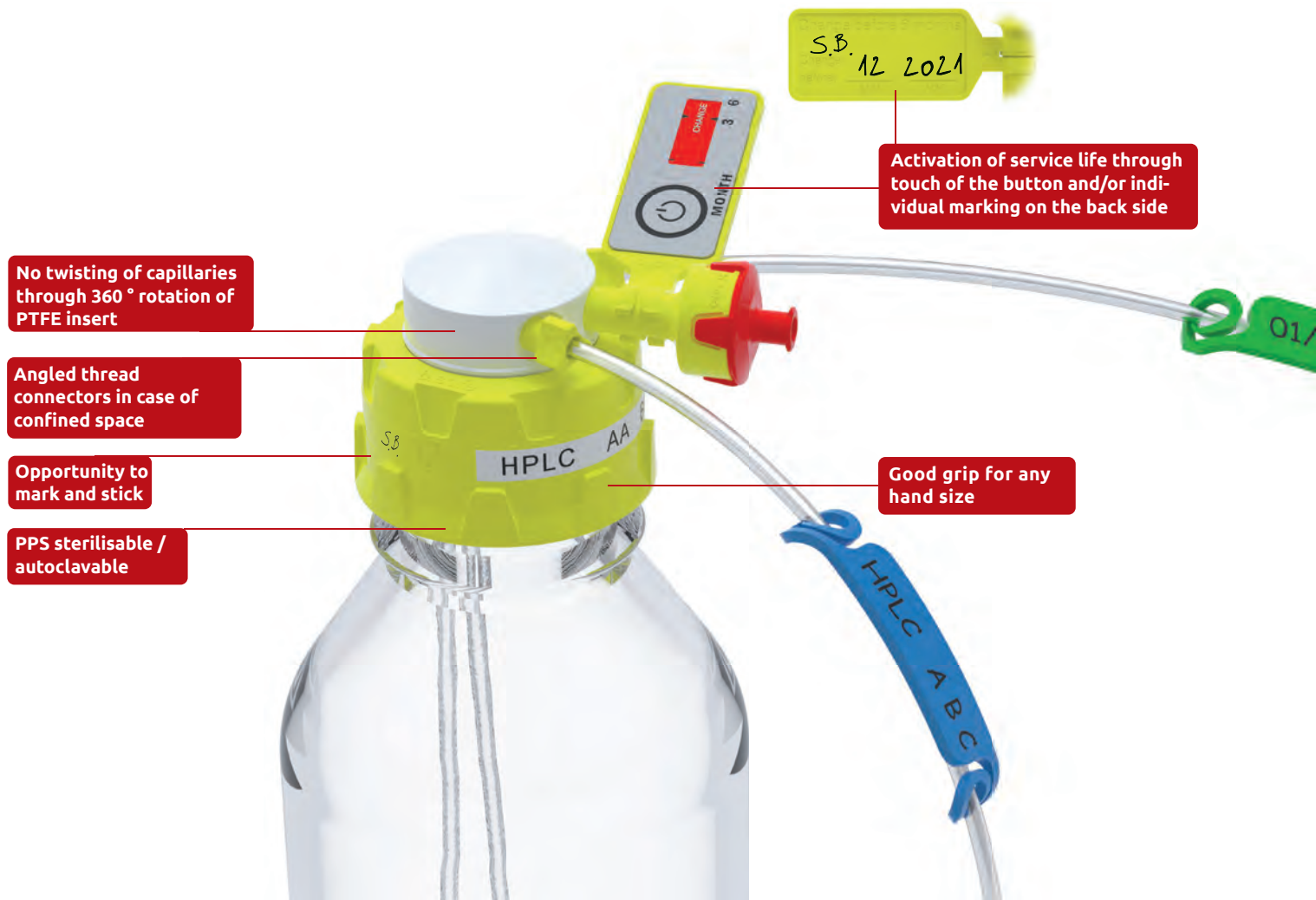
A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances on the bottle neck. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



b.safe APPROPRIATE

Blind Fittings Page 44

For easy closure of unused connectors.



No twisting of capillaries through 360° rotation of PTFE insert

Angled thread connectors in case of confined space

Opportunity to mark and stick

PPS sterilisable / autoclavable

S.B. 12 2021

Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size



S.B. HPLC AA

HPLC A B C

01/

b.safe Space-saving Caps**GL45**

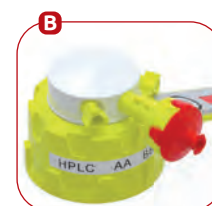
Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
 Chemical resistance: **+++ universal**

Screw cap made of PPS for GL45 thread, flat and freely turnable insert made of PTFE with lateral threaded necks in an 90° angle to the bottle thread. With PFA Fittings for capillaries with O. D. 3,2 mm, Blind Fittings made of PFA to close unused connectors and an Air Valve with Service Life Indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 mm (yellow)	0	M 147-01
B	2	2 x Ø 3,2 mm (yellow)	1 (milky white)	M 147-02

Application:

Especially recommended for applications with confined height space. Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe Fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.

**b.safe INFORMATIVE****Operating Principle Page 162**

This is how pressure compensation is made during extraction.

**Bottle thread GL45 (DIN168)**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps **GL45** with Stopcocks

b.safe Caps GL45 with Stopcocks together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles and canisters with GL45 thread.

The special feature: a PTFE-insert with integrated stopcocks. They minimize dripping of connected capillaries during bottle exchange or can be used for simply closing unused ports.

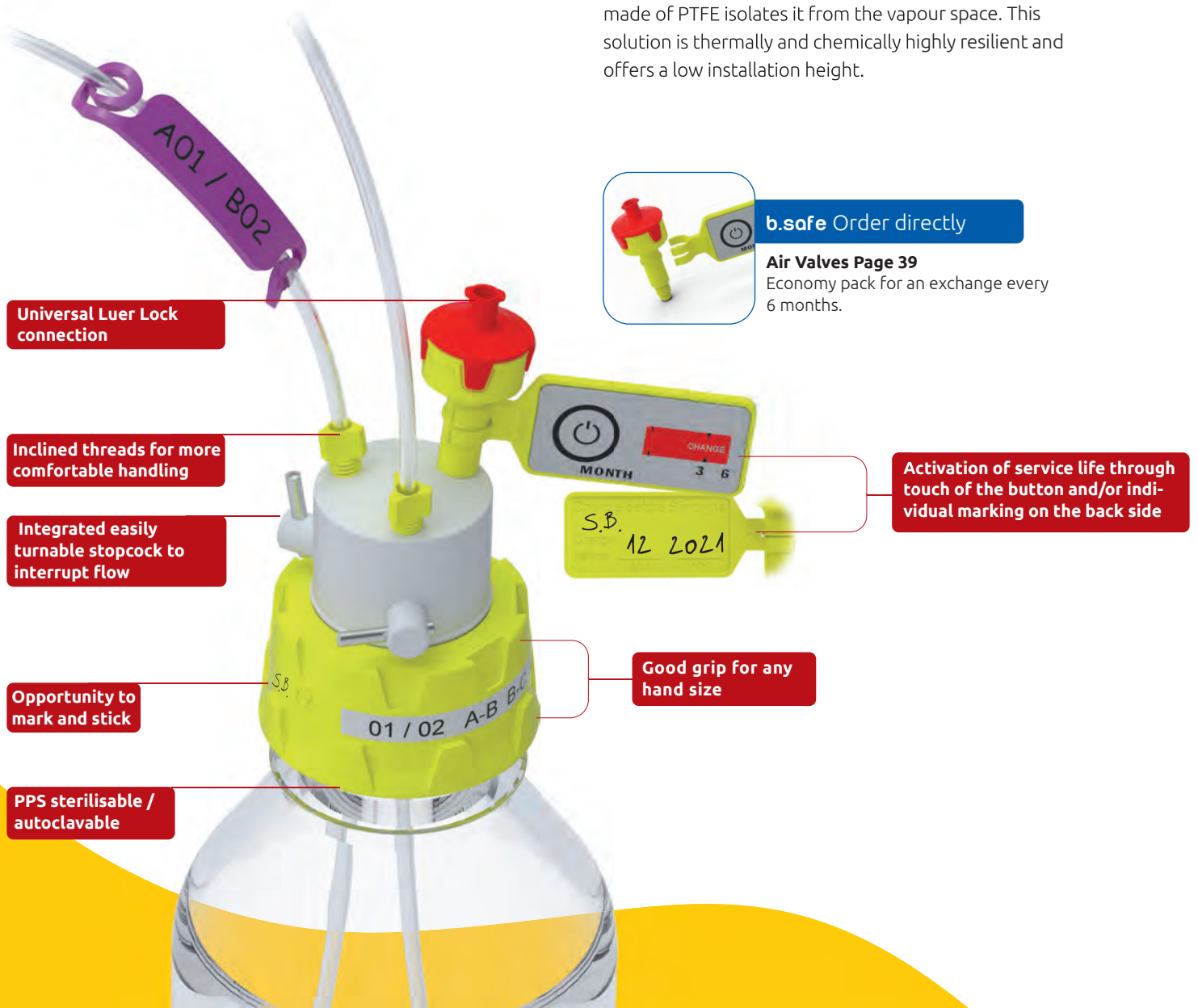
With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GL45 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (UNF 1/4") guarantee intuitive insertion of Fittings and Air Valve and offer more space on the PTFE insert. Additional threads (UNF 1/4") on the bottom side of the insert allow to extend the extraction tube to the bottom of the bottle.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances on the bottle neck. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



b.safe Order directly

Air Valves Page 39
Economy pack for an exchange every 6 months.

Universal Luer Lock connection

Inclined threads for more comfortable handling

Integrated easily turnable stopcock to interrupt flow

Opportunity to mark and stick

PPS sterilisable / autoclavable

Good grip for any hand size

Activation of service life through touch of the button and/or individual marking on the back side

b.safe Caps **GL45** with Stopcocks

Material: **PTFE, PPS** | temperature resistance: **-20 °C to +200 °C** |
chemical resistance: **+++ universal**

Screw cap made of PPS for thread GL45, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4") and an Air Valve with service life indicator. All capillary connectors with integrated stopcock, connection to the bottle ground through additional capillary connector on the bottom side of the lid. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings (top side)	Number of Fittings (bottom side)	Cat. No.
A	1	1 x Ø 3,2 mm (yellow)	1x Ø 3,2 mm (milky-white)	M 143-01
B	2	2 x Ø 3,2 mm (yellow)	2x Ø 3,2 mm (milky-white)	M 143-02
C	3	3 x Ø 3,2 mm (yellow)	3x Ø 3,2 mm (milky-white)	M 143-03

Application:

Perfectly matched system for removal of eluents. By means of the b.safe Fittings made of PFA, tubing can be connected to the capillary connectors. The conical seal cone clamps the tubing and seals the connection safely. Through additional capillary connectors on the bottom side of the lid, you can lead tubing down to the bottle ground. Dripping from connected lines during bottle exchange can be avoided through the stopcocks. Unused connectors can be closed if necessary. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and hose connectors for many inner diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



Bottle thread GL45 (DIN168)

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps GL45 Preparative

b.safe Caps GL45 Preparative are supplied with Fittings for tubing O.D. 6,35 and especially adapted to the flow rates in preparative HPLC.

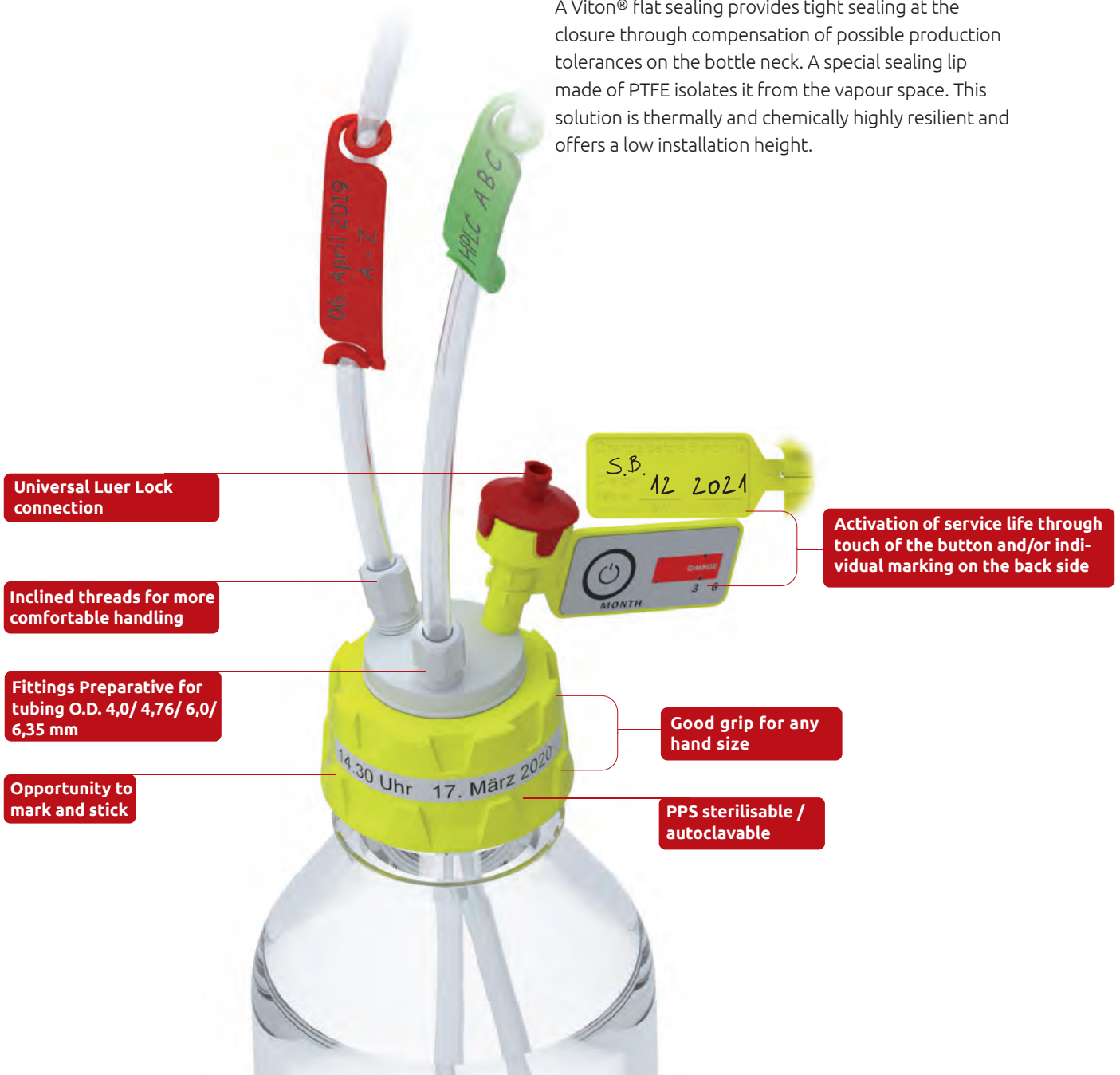
With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GL45 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (NPT 1/8"UNF 1/4") guarantee intuitive insertion of Fittings and Air Valve and provide thus sufficient space also for the assembly of b.safe Fittings Preparative. The included b.safe Air Valve is also suitable for preparative HPLC and can be stocked with the standard Air Valves.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances on the bottle neck. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



Universal Luer Lock connection

Inclined threads for more comfortable handling

Fittings Preparative for tubing O.D. 4,0/ 4,76/ 6,0/ 6,35 mm

Opportunity to mark and stick

Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size

PPS sterilisable / autoclavable

b.safe Caps **GL45** Preparative

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for thread GL45, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4"), PTFE Fittings Preparative for tubing with O.D. 6,35 mm (thread NPT 1/8"), Blind Fittings made of PTFE to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of tube connectors	Number of capillary connectors	Number of Fittings mm	Number of Blind Fittings	Cat. No.
A	1	0	1x Ø 6,35(white)	0	M 144-01
B	2	0	2x Ø 6,35(white)	1 (white)	M 144-02
C	3	0	3x Ø 6,35 (white)	2 (white)	M 144-03
D	1	1	1x Ø 3,2 (yellow) 1x Ø 6,35 (white)	0	M 144-05

Application:

Adapted to the requirements in preparative HPLC. Tubing with O.D. 4,0 up to 6,35 mm can be inserted down to the ground of the bottle by means of the b.safe Fittings Preparative made of PTFE. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. b.safe Fittings Preparative for tubing O.D. 4,0/4,35/4,76/6,0/6,35 mm can be found from page 43.



b.safe APPROPRIATE

Fittings Preparative Page 43

For easy connection of tubing with Ø 4,0 - 6,35 mm.



Bottle thread GL45 (DIN168)

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps S40

b.safe Caps S40 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles with S40 thread without aids such as threaded adaptors.

With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps S40 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent. The 6 months service life of the filter can be easily monitored through the attached service life indicator.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.

Universal Luer Lock connection

Inclined threads for more comfortable handling

No twisting of capillaries through 360° rotation of PTFE insert

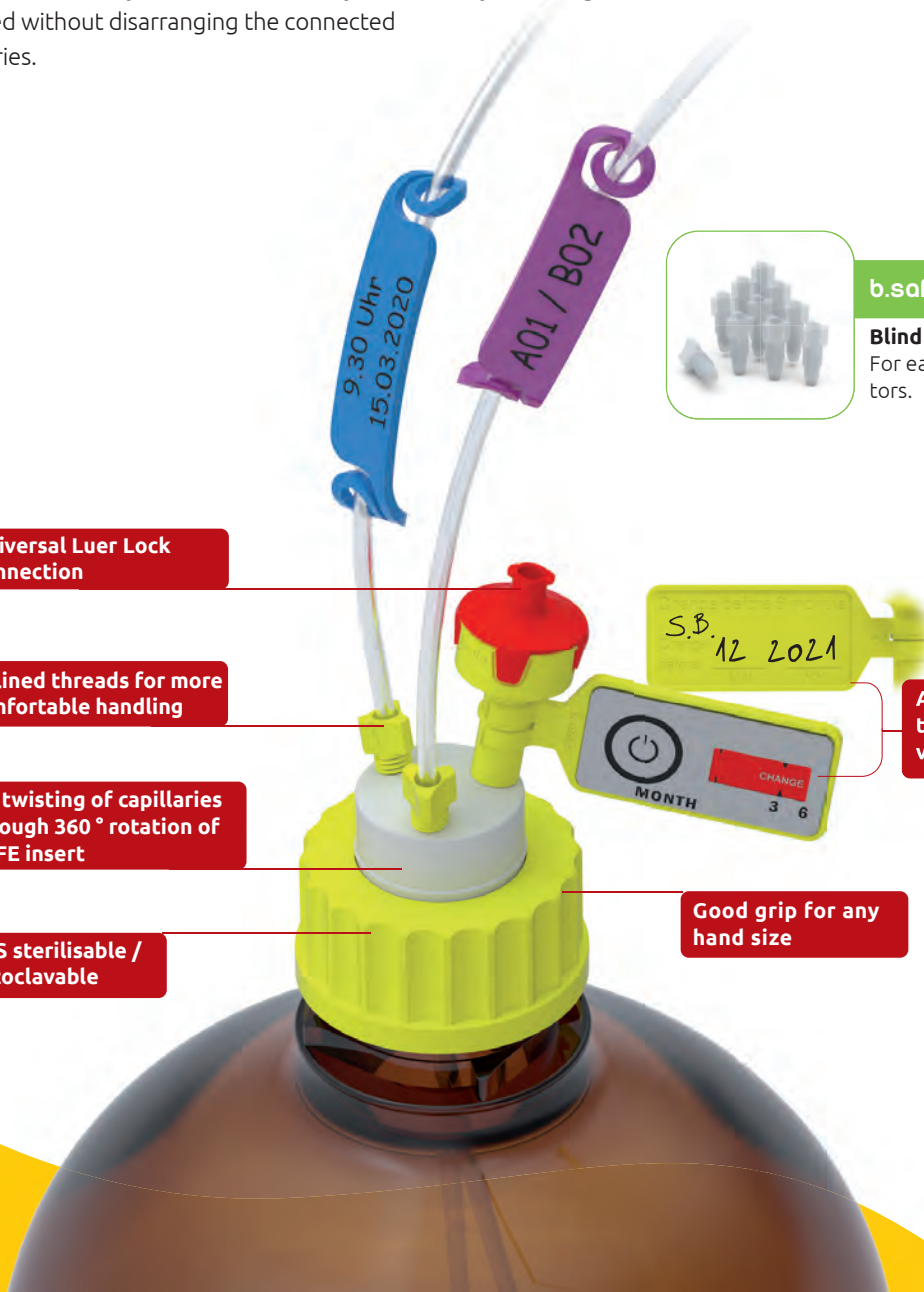
PPS sterilisable / autoclavable

Good grip for any hand size

b.safe APPROPRIATE

Blind Fittings Page 44

For easy closure of unused connectors.



b.safe Caps **S40**

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for thread S40, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings mm	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 (yellow)	0	M 140-01
B	2	2 x Ø 3,2 (yellow)	1 (milky-white)	M 140-02
C	3	3 x Ø 3,2 (yellow)	2 (milky-white)	M 140-03

Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



Bottle thread **S40 (DIN55 525)**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps S40 with Stopcocks

b.safe Caps S40 with Stopcocks together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles and canisters with S40 thread.

The special feature: a PTFE-insert with integrated stopcocks. They minimize dripping of connected capillaries during bottle exchange or can be used for simply closing unused ports.

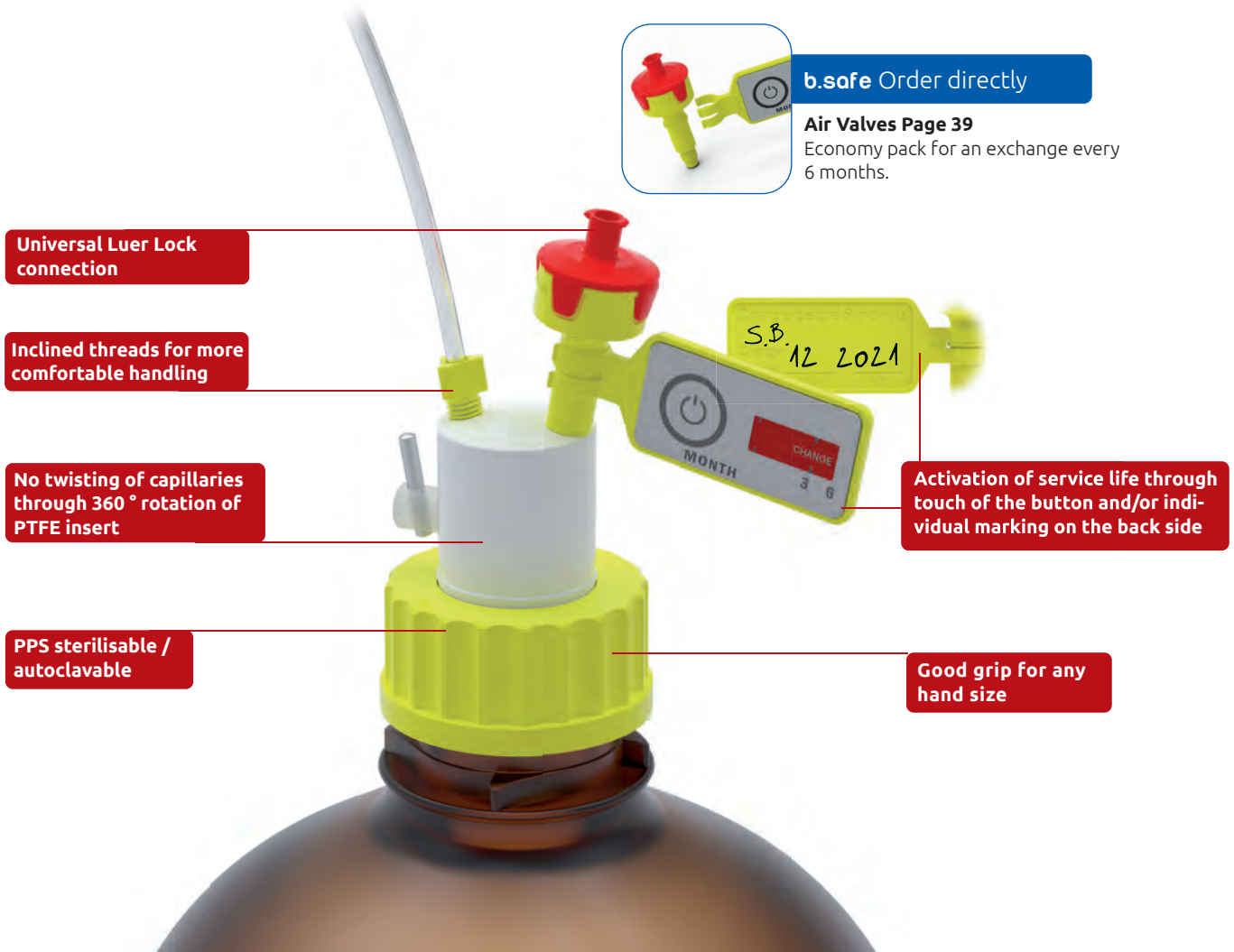
With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps S40 can be sterilized and autoclaved and easily cleaned in the dishwasher.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (UNF 1/4") guarantee intuitive insertion of Fittings and Air Valve and offer more space on the PTFE insert. Additional threads (UNF 1/4") on the bottom side of the insert allow to extend the extraction tube to the bottom of the bottle.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances on the bottle neck. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



Universal Luer Lock connection

Inclined threads for more comfortable handling

No twisting of capillaries through 360° rotation of PTFE insert

PPS sterilisable / autoclavable

Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size



b.safe Order directly

Air Valves Page 39
Economy pack for an exchange every 6 months.

b.safe Caps **S40** with Stopcocks

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for thread S40, free movable insert made of PTFE.
With PFA fittings for capillaries with O. D. 3,2 mm (thread UNF 1/4") and an Air Valve with service life indicator. All capillary connectors with integrated stopcock, connection to the bottle ground through additional capillary connector on the bottom side of the lid. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings (top side) mm	Number of Fittings (bottom side) mm	Cat. No.
A	1 with stopcock	1 x Ø 3,2 (yellow)	1 x Ø 3,2 (milky-white)	M 141-01

Application:

Perfectly matched system for removal of eluents. By means of the b.safe Fittings made of PFA, tubing can be connected to the capillary connectors. The conical seal cone clamps the tubing and seals the connection safely. Through additional capillary connectors on the bottom side of the lid, you can lead tubing down to the bottle ground. Dripping from connected lines during bottle exchange can be avoided through the stopcocks. Unused connectors can be closed if necessary. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and hose connectors for many inner diameters can be found from page 43.



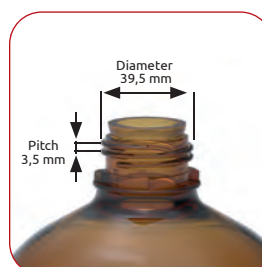
bottom view



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



Bottle thread **S40 (DIN55 525)**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps



If you stock solvents in bottles with GLS80 thread, a direct extraction with b.safe Caps is no problem. b.safe Caps GLS80 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles and containers with GLS80 thread.

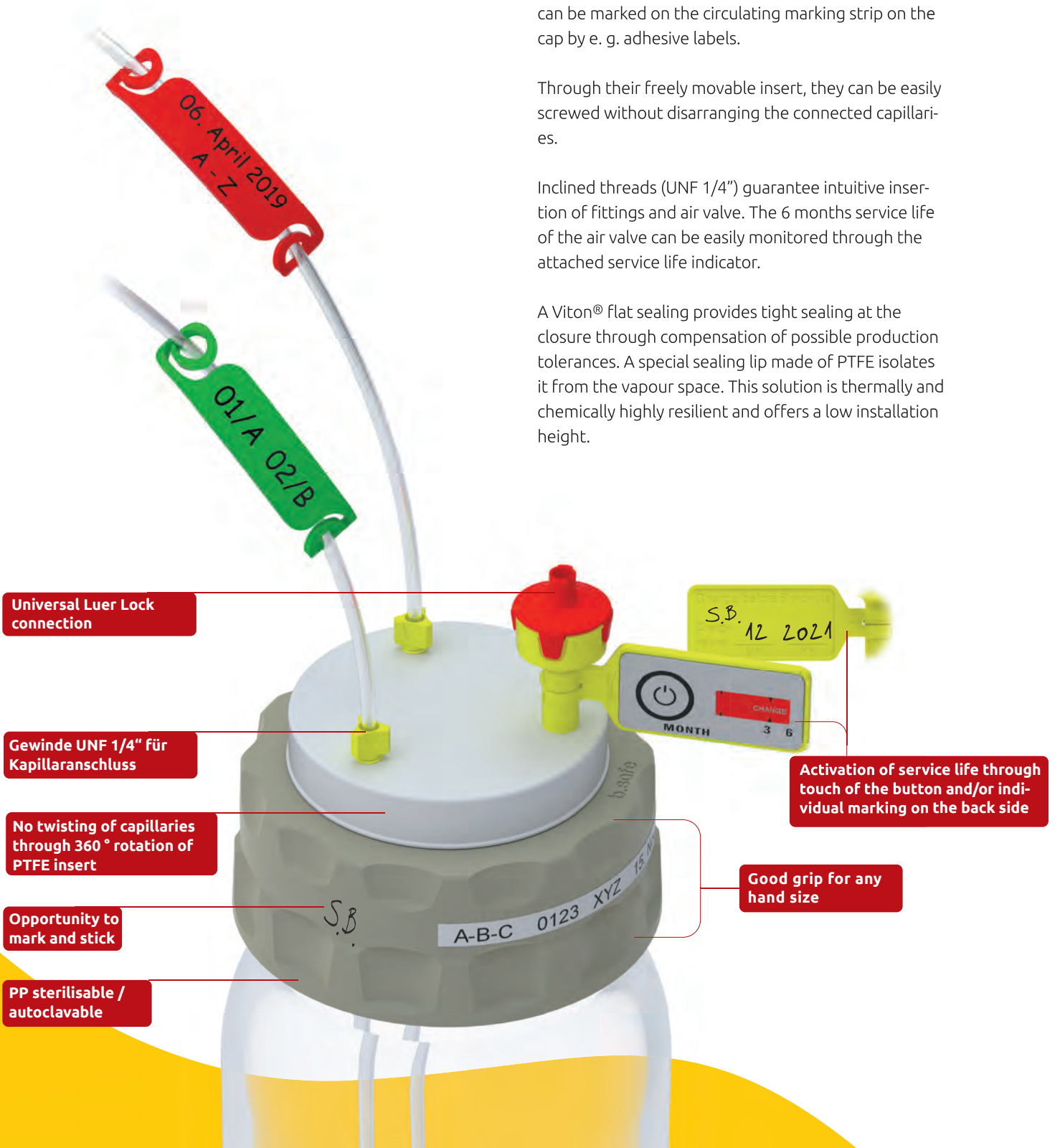
With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GLS80 can be easily cleaned if necessary.

The ergonomic design and eroded surfaces offer stable grip for gloved hands. Additionally, the bottle content can be marked on the circulating marking strip on the cap by e. g. adhesive labels.

Through their freely movable insert, they can be easily screwed without disarranging the connected capillaries.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve. The 6 months service life of the air valve can be easily monitored through the attached service life indicator.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



Universal Luer Lock connection

Gewinde UNF 1/4" für Kapillaranschluss

No twisting of capillaries through 360° rotation of PTFE insert

Opportunity to mark and stick

PP sterilisable / autoclavable

Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size



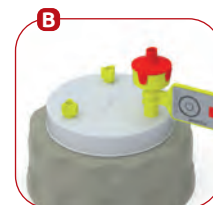
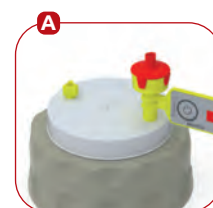
Material: **PTFE, PP** | Temperature resistance: **0 °C to +110 °C** |
Chemical resistance: **++ very good**

Screw cap made of PP for thread GLS80, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings mm	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 (yellow)	0	M 180-01
B	2	2 x Ø 3,2 (yellow)	1 (milky white)	M 180-02
C	3	3 x Ø 3,2 (yellow)	2 (milky white)	M 180-03

Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe Order directly

Air Valves Page 39

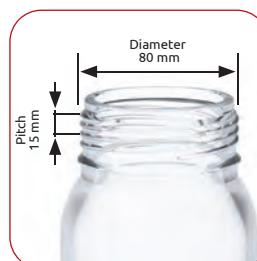
Economy pack for an exchange every 6 months.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



**Bottle thread
GLS80 (DIN168)**

Not sure if this cap fits?

Help for thread determination from page 168.

Sophisticated Safety Solutions – custom made!

You are looking for a solution exactly adapted to your application?

As a manufacturing company, we can make products to your specifications. This is easier, quicker and often more economic than you may expect.

Contact our experts – we give advice and support already starting with the construction and production as per your requirements and in compliance with the chosen raw materials – already from 1 piece.

We only need a drawing (a sketch is sufficient) and some further information.

You have a special request?

www.bsafede.de or +49 (0) 93 46-92 86-0



Protect your employees
appropriately

b.safe

Easy health protection

Solvents in storage and waste containers often bear potential for serious health danger and chronic diseases. During hectic working days in laboratories, it often happens that contaminant sources are accepted or patently overlooked. Nowadays, the protection of our health, the environment and all resources has highest priority.

b.safe offers all necessary products to change your laboratory to a contemporarily safe workplace!

**Sophisticated
Safety Solutions for HPLC.**

b.safe Distributors for Flushing Bottles

Use the b.safe Distributors for Flushing Bottles and rely also during flushing of inlet channels on a consequently tight system.

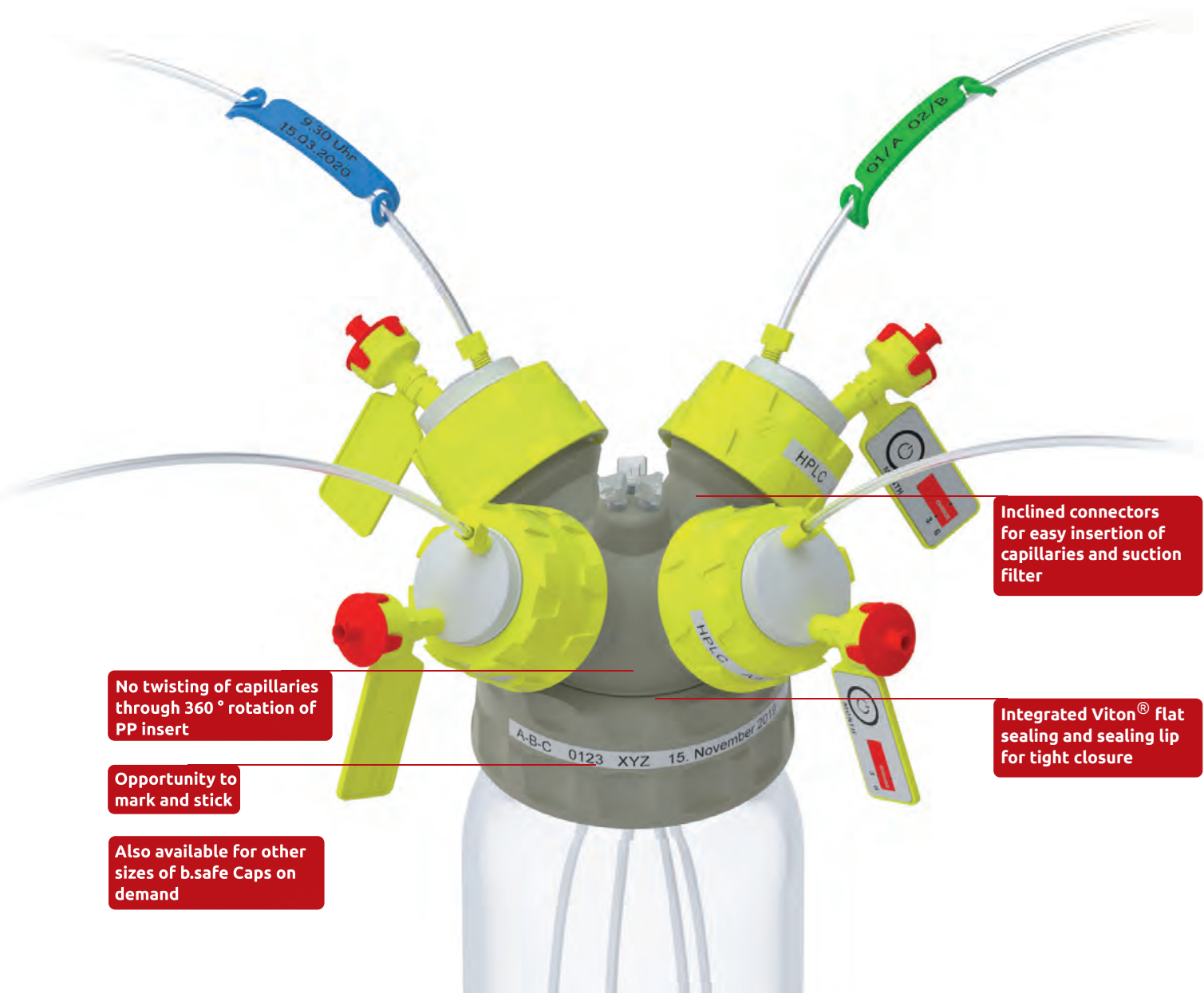
Instead of hanging the capillaries in an open flushing bottle, you can remove the b.safe Cap GL45 from the extraction bottle, introduce all connected tubing including suction filters into the flushing bottle and close it tightly by screwing the b.safe Cap on the lateral GL45 neck of the distributor.

By using completely assembled b.safe Caps the system can be flushed without any worries regarding a contamination of the used solvents or an escape of solvent vapours.

The special feature of the b.safe Distributor for Flushing Bottles: besides the cleaning of the inlet capillaries via the four GL45 ports, also piston back flushing and needle seat irrigation are possible by connecting suitable tubing to the 3 central capillary connectors (thread UNF 1/4).

Unused ports on the Distributor for Flushing Bottles can be closed with standard screw caps GL45.

b.safe Distributors for Flushing Bottles are available for flasks with either thread GL45 or GLS80. We recommend to use bottles with thread GLS80 in order to ensure a comfortable insertion and removal of the tubing including assembled suction filters.



No twisting of capillaries through 360° rotation of PP insert

Opportunity to mark and stick

Also available for other sizes of b.safe Caps on demand

Inclined connectors for easy insertion of capillaries and suction filter

Integrated Viton® flat sealing and sealing lip for tight closure

b.safe Distributors for Flushing Bottles

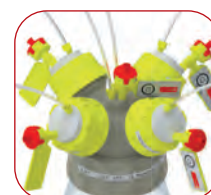
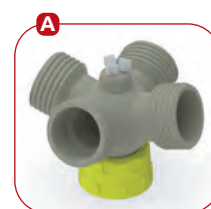
Material: **PP** | Temperature resistance: **0 °C to +110 °C** |
Chemical resistance: **++ very good**

Screw cap made of PPS for GL45 thread / PP for GLS 80 thread, free movable insert made of PP with 4 lateral connectors (GL45) suitable for b.safe Caps GL 45 and 3 centric capillary connectors (UNF 1/4"). Version and scope of delivery as per below chart.

	Suitable for	Number of flushing connectors	Number of capillary connectors	Number of Blind Fittings	Cat. No.
A	GL45	4x GL45	3	3 (milky white)	M 181-03
B	GLS80	4x GL45	3	3 (milky white)	M 181-10

Application:

Flushing the HPLC installation without pollution or loss of solvents. The handling is very easy as the distributor is directly mounted on the flushing bottle. Remove the b.safe Caps from the eluent bottles and mount them on the connectors of the Distributor for Flushing Bottles. The passage at the distributor neck is sufficiently dimensioned so that the capillaries mounted on the cap can be inserted into the flushing bottle together with the filter. For the GL45 version of the Distributor for Flushing Bottles, we recommend to use smallest possible suction filters (max. O.D. 14 mm) to facilitate the insertion of tubing through the small bottle neck. If a connector of the distributor is not used, it can be closed with a screw cap GL45. Harmful solvent vapours cannot escape and the rinse solution is not polluted through ambient air by means of b.safe Caps with Air Valve. The Distributor for Flushing Bottles can also be used for back flushing the piston and/or the needle seat. Just connect the needed capillaries as well as an Air Valve with b.safe Fittings on the centric capillary connectors.



b.safe APPROPRIATE

Blind Fittings Page 44

For easy closure of unused connectors.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



**Bottle thread
GLS80 (DIN168)**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps GL28

b.safe Caps GL28 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles with GL28 thread without aids such as threaded adaptors. Please check page 168 for determination of standard threads.

With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GL28 can be easily cleaned if necessary.

The ergonomic design and eroded surfaces offer stable grip for gloved hands.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



b.safe Order directly

Air Valves Page 39
Economy pack for an exchange every 6 months.

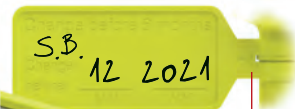
Universal Luer Lock connection

Inclined threads for more comfortable handling

No twisting of capillaries through 360° rotation of PTFE insert

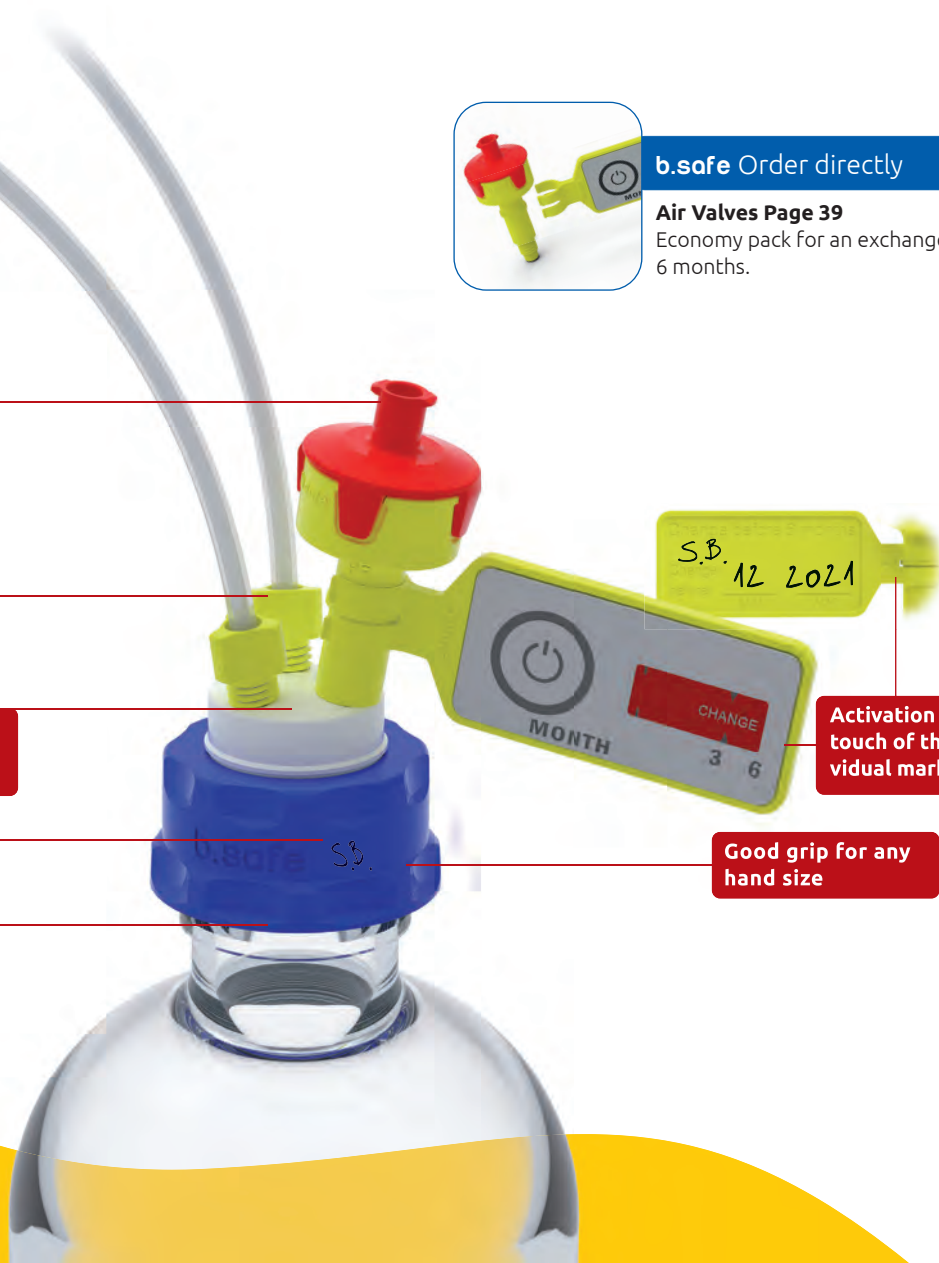
Opportunity to mark and stick

PPS sterilisable / autoclavable



Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size



b.safe Caps GL28

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for GL28 thread, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (thread UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings mm	Number of Blind Fittings	Cat No.
A	1	1 x Ø 3,2 (yellow)	0	M 128-01
B	2	2 x Ø 3,2 (yellow)	1 (milky white)	M 128-02



Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



Bottle thread GL28 (DIN168)

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps

GPI
38/400

b.safe Caps GPI38/400 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from bottles with GPI38/400 thread without aids such as threaded adaptors. Please check page 168 for determination of standard threads.

With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GPI38/400 can be easily cleaned if necessary.

The ergonomic design and eroded surfaces offer stable grip for gloved hands. Additionally, the bottle content can be marked on the circulating marking strip on the cap by e. g. adhesive labels.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.

Universal Luer Lock connection

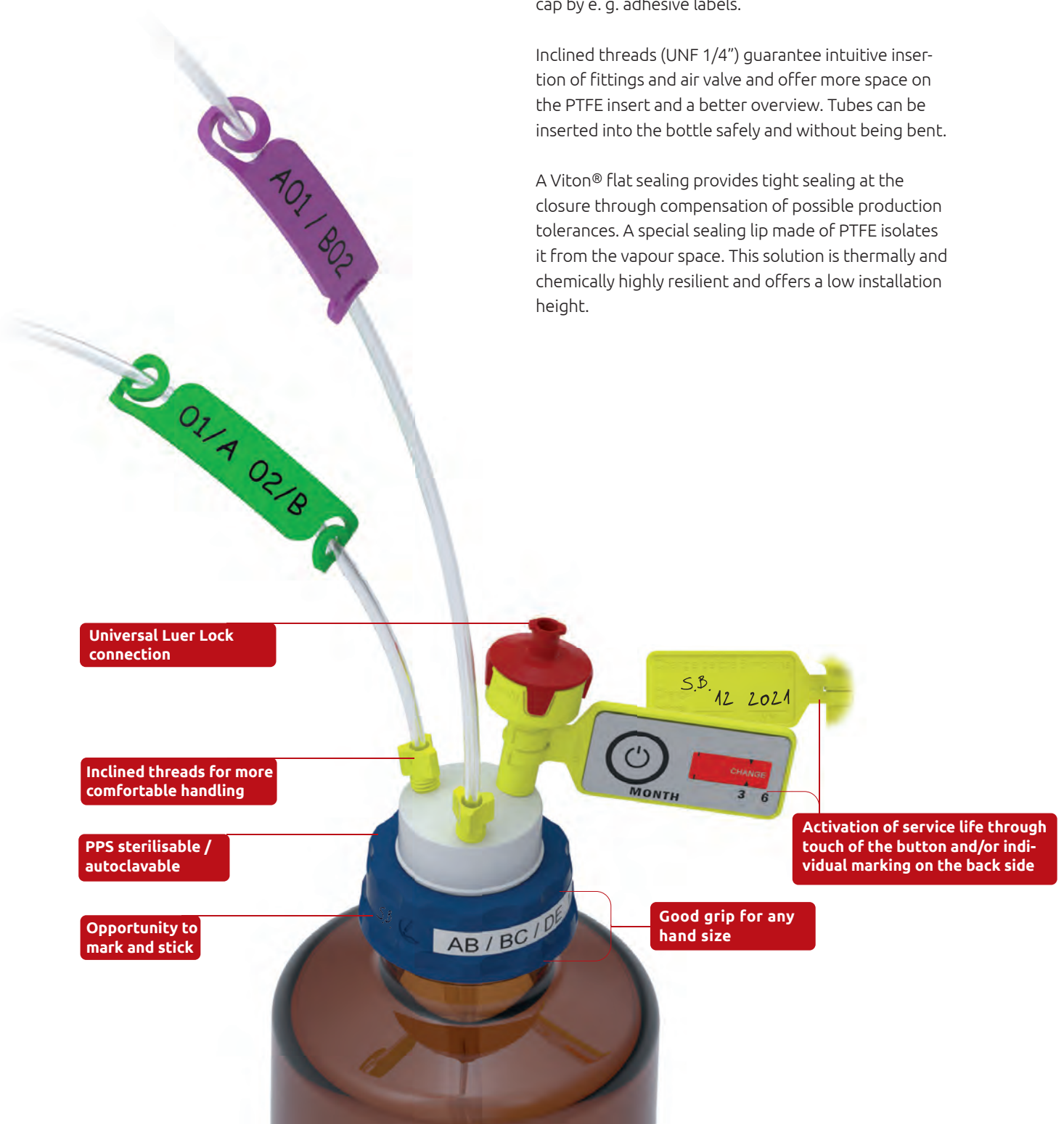
Inclined threads for more comfortable handling

PPS sterilisable / autoclavable

Opportunity to mark and stick

Good grip for any hand size

Activation of service life through touch of the button and/or individual marking on the back side





Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for thread GPI38/400, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator.

Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 mm (yellow)	0	M 138-01
B	2	2 x Ø 3,2 mm (yellow)	1 (milky-white)	M 138-02
C	3	3 x Ø 3,2 mm (yellow)	2 (milky-white)	M 138-03

Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe Order directly

Air Valves Page 39

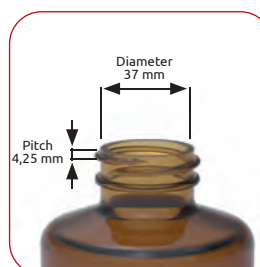
Economy pack for an exchange every 6 months.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



**Bottle thread
GPI38/400**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps

GPI
38/430

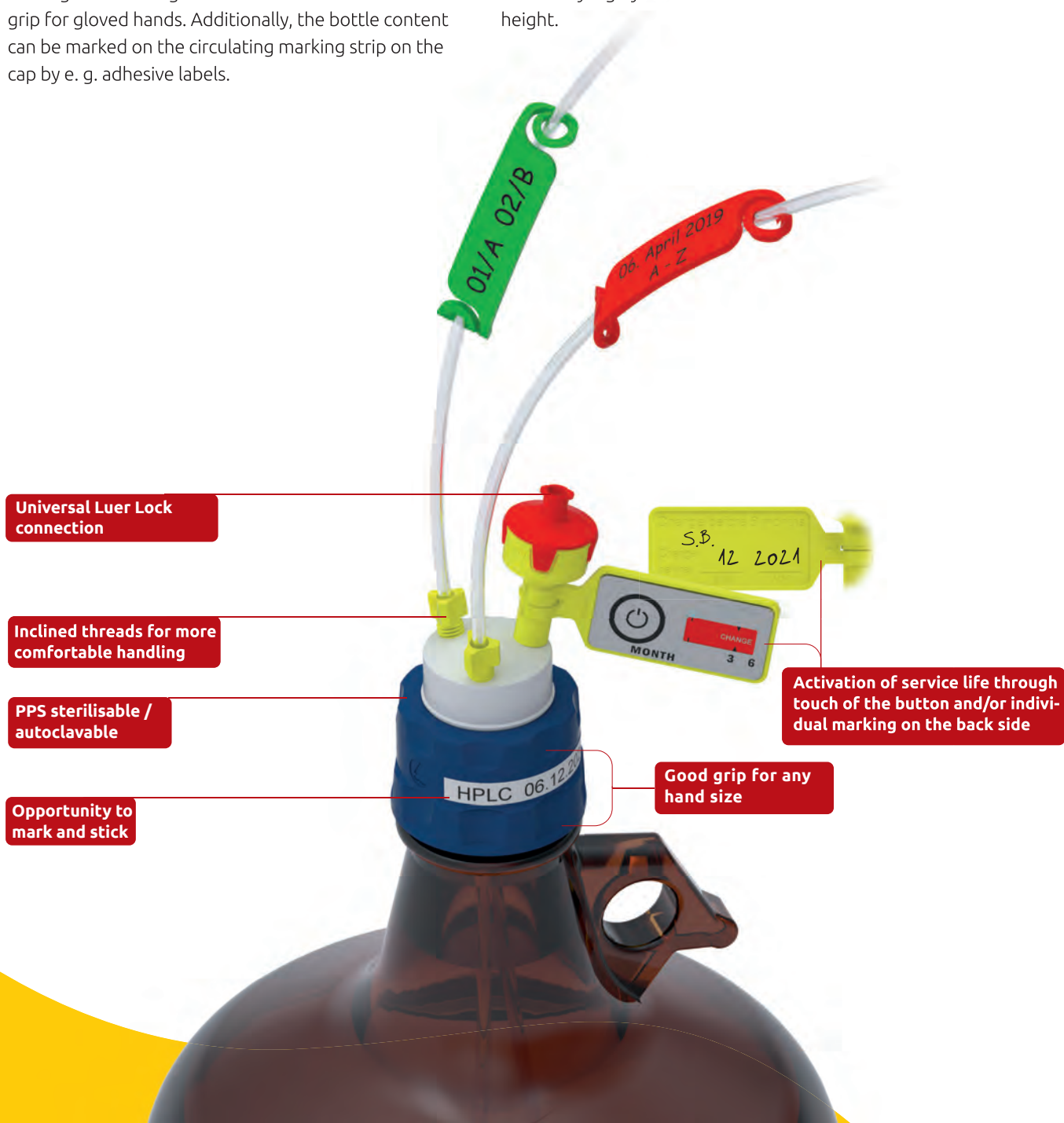
Together with Fittings, Tubing and an Air Valve, b.safe Caps GPI38/430 form a perfect unit for eluent extraction from bottles with GPI38/430 thread. Please check page 168 for determination of standard threads.

With the cap made of robust PPS and the chemically highly resistant PTFE insert, b.safe Caps GPI38/430 can be easily cleaned if necessary.

The ergonomic design and eroded surfaces offer stable grip for gloved hands. Additionally, the bottle content can be marked on the circulating marking strip on the cap by e. g. adhesive labels.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.



b.safe Caps



Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

Screw cap made of PPS for thread GPI38/430, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of capillary connectors	Number of Fittings	Number of Blind Fittings	Cat. No.
A	1	1 x Ø 3,2 mm (yellow)	0	M 139-01
B	2	2 x Ø 3,2 mm (yellow)	1 (milky-white)	M 139-02
C	3	3 x Ø 3,2 mm (yellow)	2 (milky-white)	M 139-03

Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe Fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162
This is how pressure compensation is made during extraction.



b.safe APPROPRIATE

Blind Fittings Page 44
For easy closure of unused connectors.

Bottle thread
GPI38/430

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps B83

b.safe Caps B83 together with Fittings, Tubing and an Air Valve form a perfect unit for solvent extraction from balloon bottles with B83 thread without aids such as threaded adaptors. Please check page 168 for determination of standard threads.

With the cap made of robust PE and the chemically highly resistant PTFE insert, b.safe Caps B83 can be easily cleaned if necessary.

Inclined threads (UNF 1/4") guarantee intuitive insertion of fittings and air valve and offer more space on the PTFE insert and a better overview. Tubes can be inserted into the bottle safely and without being bent.

A Viton® flat sealing provides tight sealing at the closure through compensation of possible production tolerances. A special sealing lip made of PTFE isolates it from the vapour space. This solution is thermally and chemically highly resilient and offers a low installation height.

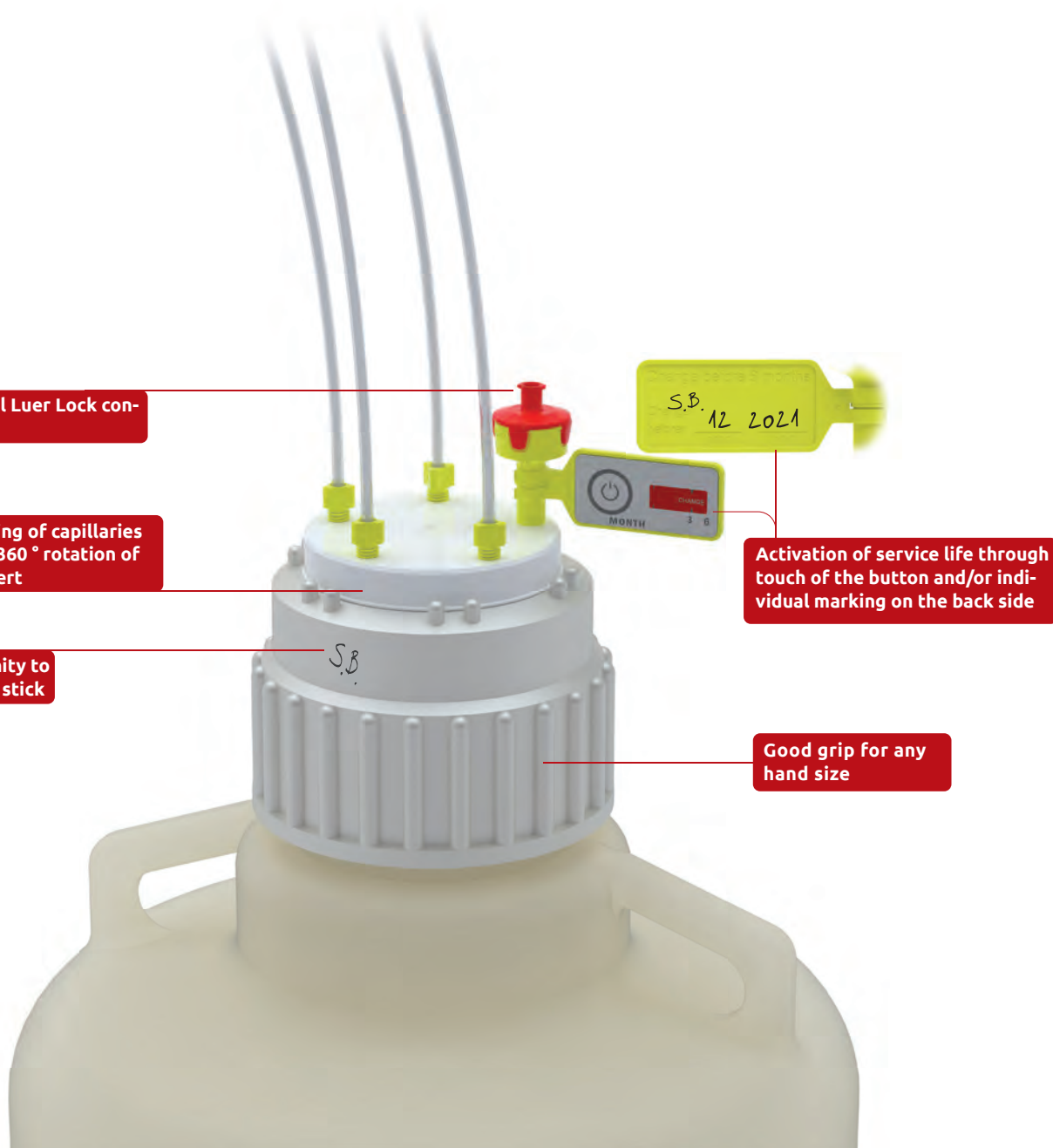
Universal Luer Lock connection

No twisting of capillaries through 360° rotation of PTFE insert

Opportunity to mark and stick

Activation of service life through touch of the button and/or individual marking on the back side

Good grip for any hand size



b.safe Caps**B83**

Material: **PTFE, PE** | Temperature resistance: **-50 °C to +80 °C** |
 Chemical resistance: **++ very good**

Screw cap made of PE for B83 thread, free movable insert made of PTFE. With PFA fittings for capillaries with O. D. 3,2 mm (thread UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.



	Number of capillary connectors	Number of Fittings mm	Number of Blind Fittings	Cat. No.
A	4	4 x Ø 3,2 (yellow)	3	M 183-04

Application:

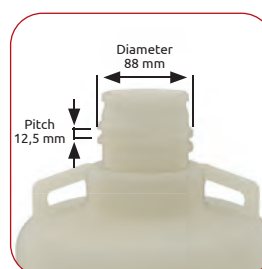
Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe Fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.

**b.safe Order directly****Air Valves Page 39**

Economy pack for an exchange every 6 months.

**b.safe INFORMATIVE****Operating Principle Page 162**

This is how pressure compensation is made during extraction.

**Bottle thread B83**

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Caps with Ground Joint

NS
29/32

b.safe Caps with Ground Joint NS29/32 are especially made for the direct extraction of solvents from flasks with ground joint NS29/32. The threaded ports on the top can be used to connect a b.safe Air Valve and up to two capillary tubes.

The robust ground joint body made of PTFE with sealing rings on the outside of the cone provides a tight closure. To prevent glass break due to a stuck connection, b.safe Caps with Ground Joint are equipped with a loosening nut. By turning the nut the stuck body is lifted without any effort and can easily be removed.

The ergonomic design of the knurled handle offers stable grip for gloved hands.

Inclined threads (UNF 1/4") guarantee intuitive insertion of Fittings and Air Valve and offer more space on the PTFE insert for a better overview. Tubes can be inserted into the bottle safely and without being bent.



b.safe APPROPRIATE

Blind Fittings Page 44

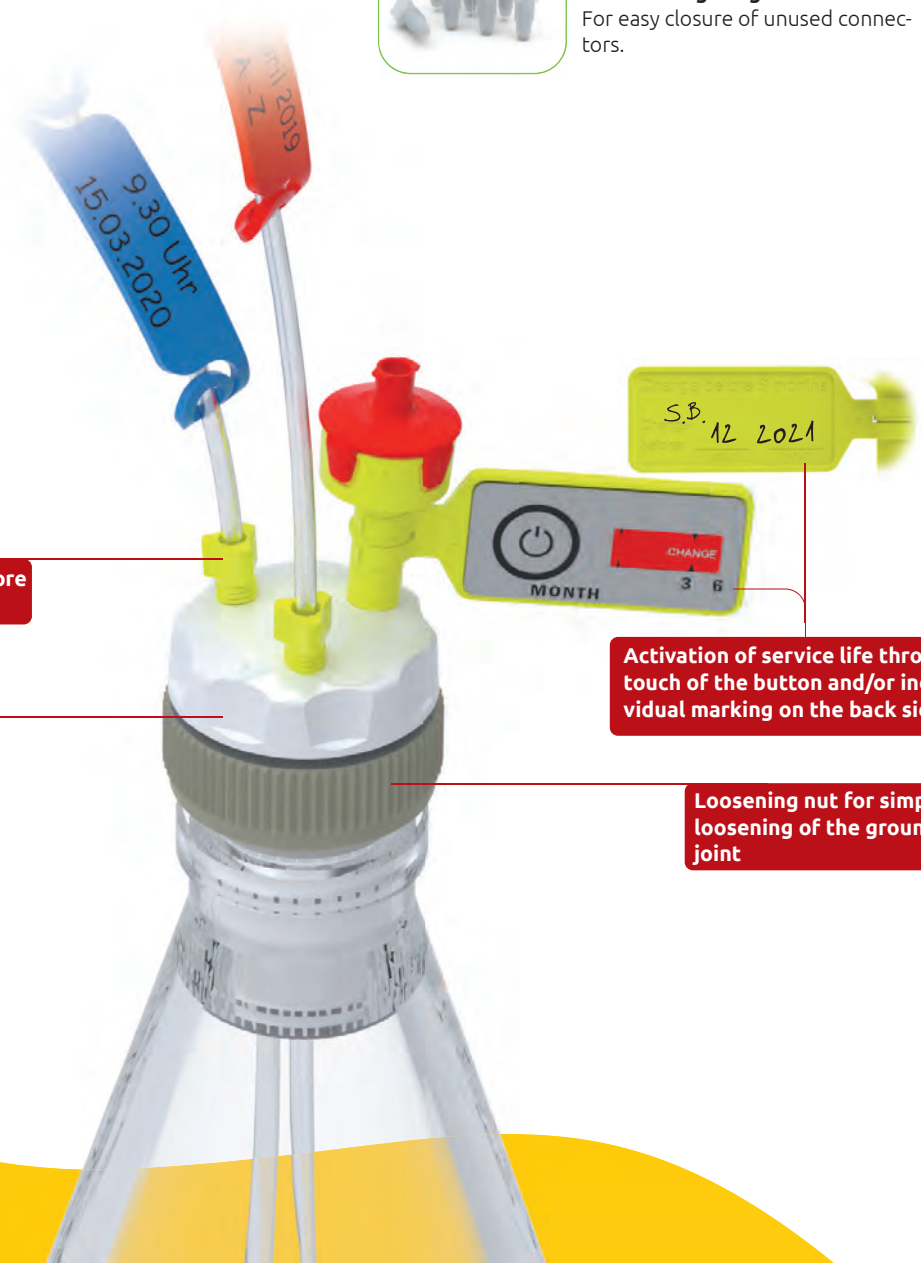
For easy closure of unused connectors.

Inclined threads for more comfortable handling

Good grip for any hand size

Activation of service life through touch of the button and/or individual marking on the back side

Loosening nut for simple loosening of the ground joint



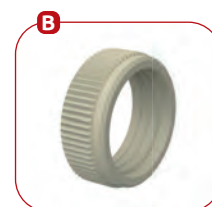
b.safe Caps with Ground Joint



Material: **PTFE, PP** | Temperature resistance: **0 °C to +110 °C** |
Chemical resistance: **++ very good**

Distributor body with ground joint cone NS 29/32, integrated nut (PP) to loosen stuck ground joints. With PFA Fittings for capillaries with O. D. 3,2 mm (thread UNF 1/4"), Blind Fittings made of PFA to close unused connections and an Air Valve with service life indicator. Version and scope of delivery as per below chart.

	Number of Fittings	Number of Fittings	Number of Blind Fittings	Cat. No.
A	2	2x Ø 3,2 mm (yellow)	1 (milky white)	M 529-01
	Accessories	Version		Cat. No.
B	Loosening nut for M 529-01	To loosen stuck ground joints. The ground joint cone is lifted and loosened without using excessive force through turning the nut.		M 529-90



Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve. PFA Fittings in other colours and for other tubing diameters can be found from page 43.



b.safe INFORMATIVE

Operating Principle Page 162

This is how pressure compensation is made during extraction.



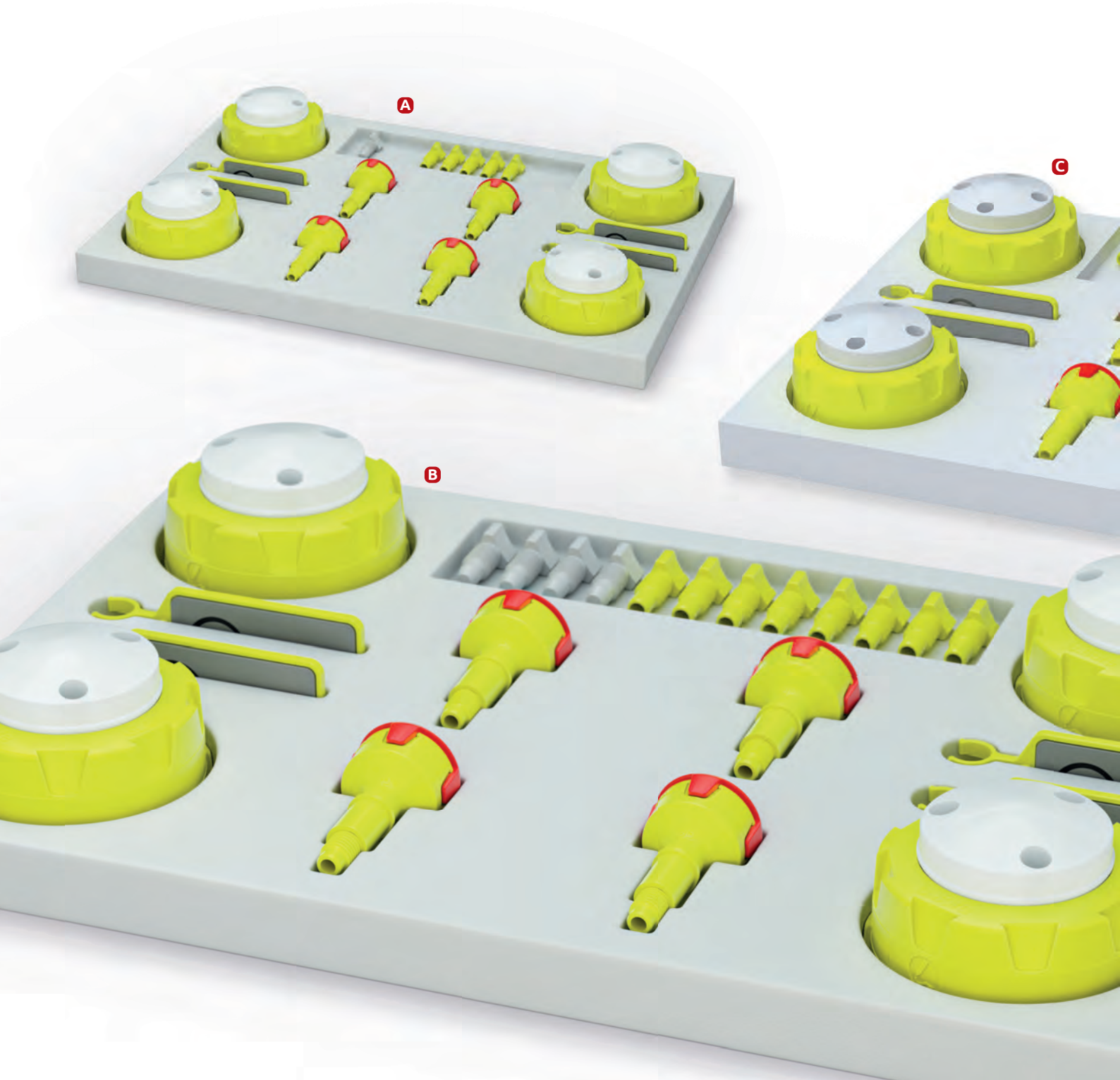
Bottle thread NS29/32 (DIN12242)

Not sure if this cap fits?

Help for thread determination from page 168.

b.safe Starter Boxes

As HPLC already challenges lab experts in their work; we help to simplify their work as much as possible. Our b.safe Starter Boxes offer everything necessary for a safe and economic extraction. Thus, you are perfectly equipped at an economic special price! Just decide for what you need. Tip: The b.safe Starter Box C has more connectors and if they are not needed, practical b.safe Blind fittings will help.



b.safe Starter Boxes

Material: **PTFE, PPS** | Temperature resistance: **-20 °C to +200 °C** |
Chemical resistance: **+++ universal**

HPLC-Sets for solvent supply containing b.safe Caps GL 45 for four bottles, PFA-Fittings for capillaries with O. D. 3,2 mm, Blind Fittings made of PFA to close unused connections as well as Air Valves with service life indicator. Version and scope of delivery as per below chart.

Description	Scope of delivery	Cat. No.
A Starter Box A	3 x b.safe Caps GL 45 with 1 capillary connection 1 x b.safe Cap GL 45 with 2 capillary connections 4 x Air Valves with service life indicator 5 x Fittings for tubing O. D. 3,2 mm (yellow) 1 x Blind fitting (milky white)	M 146-10
B Starter Box B	4 x b.safe Caps GL 45 with 2 capillary connections 4 x Air Valves with service life indicator 8 x Fittings for tubing O. D. 3,2 mm (yellow) 4 x Blind fittings (milky white)	M 146-20
C Starter Box C	4 x b.safe Caps GL 45 with 3 capillary connections 4 x Air Valves with service life indicator 12 x Fittings for tubing O. D. 3,2 mm (yellow) 8 x Blind fittings (milky white)	M 146-30



Application:

Perfectly matched system for removal of eluents. Tubing can be inserted down to the ground of the bottle by means of the b.safe fittings made of PFA. The conical seal cone clamps the tubing and seals the connection safely. The b.safe Air Valve is especially adapted to the flow rate in HPLC. The integrated non-return valve avoids evaporation of solvents and lets ambient air flow into the bottle in case of vacuum. The upstream porous PTFE membrane restrains pollutant particles and other contaminations from outside. The 6 months service life of the filter can be easily monitored through either activating the display on the cap and exchanging the valve in case of completely red colouring or documentation of the exchange date by hand and clip in the display at the valve.