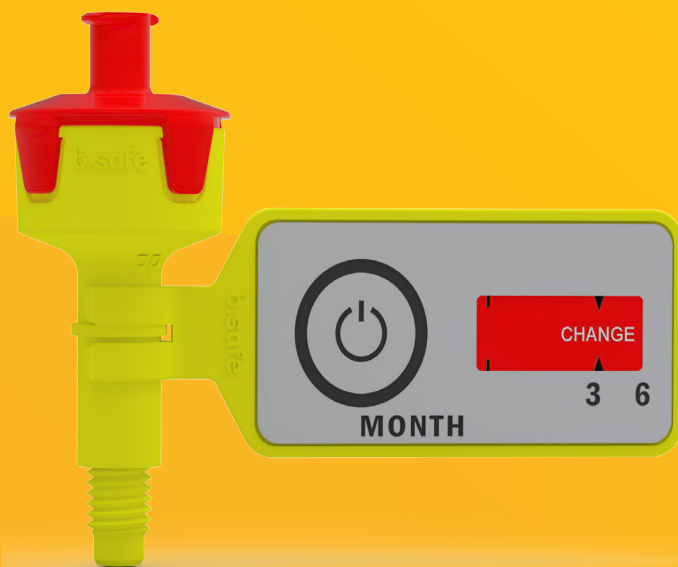


b.safe

Data sheet b.safe Air Valve



b.safe Air Valves

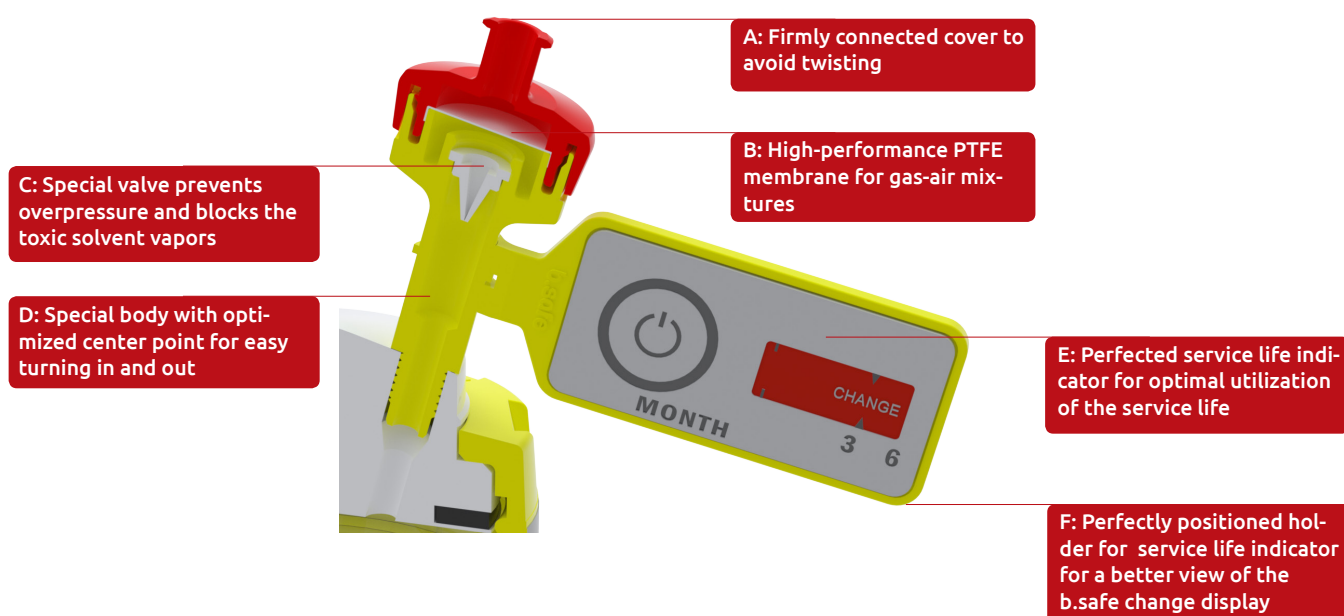
Material: **PP** | Temperature resistance: **0 °C to +110 °C** |
Chemical resistance: **++ very good**

Valve body made of PP with connection (thread UNF 1/4" 28G) suitable for b.safe Caps. Lid with aeration opening and Luerlock connector, integrated non-return valve with upstream porous PTFE membrane (1 µm), including plug-in service life indicator.

Packing unit	Service life	Cat. No.
2 pcs.	6 months	M 505-01
10 pcs.	6 months	M 505-02
50 pcs.	6 months	M 505-05

Application:

For removal of eluents. 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.



A: b.safe over for air valves

Polypropylene

Properties	Value	Test standard
Colour	nature	-
Mold shrinkage	0,012 mm/mm	ASTM D 955
Density, 73 ° F	1040 kg/m ³	ASTM D 792
Notched impact strength 23 °C	3,5 kJ/m ²	ISO 180/1A
Izod impact strength	25 kJ/m ²	ISO 180/1U
Tensile modulus	1900 MPa	ASTM D 638
Tensile strength at yield	22 MPa	ASTM D 638
Elongation at break	20 %	ASTM D 638
Flammability at a nominal 1.5 mm	V-0 class	UL 94
Flammability at thickness 0.8 mm	V-0 class	UL 94
DTUL at 264 psi	65 ° C	ASTM D 648
Vicat temperature	100 ° C	ASTM D 1525
Comparative tracking index	600	IEC 60112
Conformities	FDA RoHs REACH BSE/TSE	VO 10/2011/EU 2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Color red

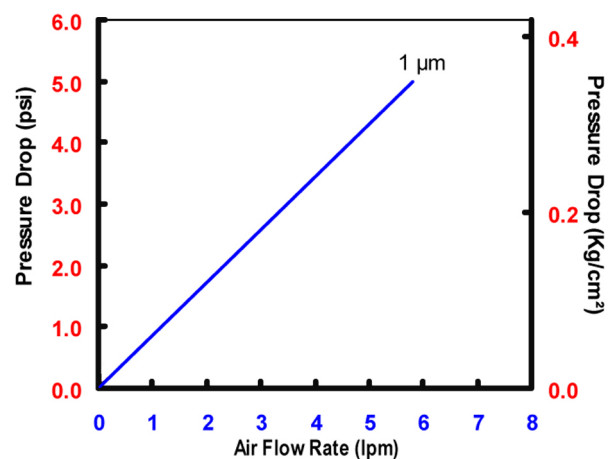
Properties	Value	Test standard
Colour	red	-
Physical state	firmly	-
Odor	weak	-
Carrier	Polyethylene	-
Softening area	100 - 140 ° C	-
Relativ density	1 - 1,5 g/cm ³	-
Water solubility 20 ° C	insoluble	-
Decomposition temperature	> 300 ° C	-
Reactivity	none	-
Chemical stability	chemically stable	-
Temperature resistance	270 ° C	DIN 53772
Lightfastness	2 - 3	DIN EN ISO 4892
Conformities	RoHs REACH BSE/TSE	2011/65/EU RoHS EC 1907/2006 1774/2002/EG

B: b.safe High performance PTFE membrane

Hydrophobic PTFE membrane filters

Properties	Value	Test standard
Colour	white	-
Material	PTFE with polypropylene support	-
Thickness	180 - 320 µm	-
Pore Size	1,0 µm	-
Diameter	17,5 mm	-
Retention Efficiency 0,2 µm	> 7 LRV / cm ²	ATCC 191416
Retention Efficiency 0,45 µm	> 7 LRV / cm ²	ATCC 14756
Retention Efficiency 1,0 µm	> 5 LRV / cm ²	ATCC 9763
Sterilization	121 ° C	-
Maximum Operating Temperature	125 ° C	-
Biosafety	passed V1 plastic	USP 88
Fiber release	passed	USP 788
Extractables Stoffe	passed NVR test	USP 661
Air Flow Rate	>2,5 lpm / cm ²	0,34 bar
Heat stability	Maintains integrity after 5 autoclaving/ steam sterilization cycles at 121 °C of 30 minutes each.	-
Expiry	3 years when stored in a cool and dry place.	-
Conformities	FDA RoHS REACH BSE/TSE	HWE (FDA) 79-3072 2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Typical Air Flow Rate



C: b.safe Special valve for solvent vapors

Silicone

Properties	Value	Test standard
Colour	white	-
Max. service temperature	+ 210 ° C	-
Min. service temperature	+ 55 ° C	-
Hardness	50 Shore A	DIN 53505
Tensile strength	6.4 N / mm ²	DIN 53504-S1
Elongation at break	450 %	DIN 53540-S1
Tear resistance	15 N / mm ²	ASTM D624 B
Compression Set	19 % bei 22 h/175 ° C	DIN 53517
Conformities	RoHs REACH	2011/65/EU RoHS EC 1907/2006

D: b.safe Body

Polypropylene

Properties	Value	Test standard
Colour	nature	-
Mold shrinkage	0,012 mm/mm	ASTM D 955
Density, 73 ° F	1040 kg/m ³	ASTM D 792
Notched impact strength 23 °C	3,5 kJ/m ²	ISO 180/1A
Izod impact strength	25 kJ/m ²	ISO 180/1U
Tensile modulus	1900 MPa	ASTM D 638
Tensile Strength at Yield	22 MPa	ASTM D 638
Elongation at break	20 %	ASTM D 638
Flammability at a nominal 1.5 mm	V-0 class	UL 94
Flammability at thickness 0.8 mm	V-0 class	UL 94
DTUL at 264 psi	65 ° C	ASTM D 648
Vicat temperature	100 ° C	ASTM D 1525
Comparative tracking index	600	IEC 60112
Conformities	FDA	VO 10/2011/EU
	RoHs	2011/65/EU RoHS
	REACH	EC 1907/2006
	BSE/TSE	1774/2002/EG

Color bight yellow

Properties	Value	Test standard
Colour	bright yellow	-
Physical state	firmly	-
Odor	weak	-
Carrier	Resin ester polymer	-
Softening area	65 - 85 ° C	-
Flash point	> 200 ° C	-
Relativ density	approx. 1,5 g/cm ³	-
Water solubility 20 ° C	insoluble	-
Decomposition temperature	> 280 ° C	-
Reactivity	none	-
Chemical stability	chemically stable	-
Temperature resistance	300 ° C	DIN 53772
Lightfastness	4	DIN EN ISO 4892
Conformities	RoHs	2011/65/EU RoHS
	REACH	EC 1907/2006
	BSE/TSE	1774/2002/EG

E: b.safe Service life indicator 3 months

Properties	Value	Test standard
Colour	light gray	-
Ingredients	PET Laminate 4-5 wt.% Polymeric assembly layers 33-36 wt.% Aluminum-plastic-laminate 23-26 wt.% Vegetable oils 15-8 wt.% Red liquid dye 4-2 wt.% Heat-sealing Polymer 0,1-1 wt.% Graphic ink and lacquer 0,1-1 wt.% Adhesive tape + Liner (full) 21-23 wt.%	-
Running time	3 months (90 days)	-
Calibration temperature	22 ° C +/- 1 ° C	-
Temporal accuracy under isothermal conditions	+/- 15 %	-
Activation force	5 +/- 2 kgf	-
Recommended temperature / relative humidity	22 ° C / 72 ° F at 20-80% relative humidity	-
Conformities	FDA	21CFR § 177.1520.

E: b.safe Service life indicator 6 months

Properties	Value	Test standard
Colour	light gray	-
Ingredients	PET Laminate 4-5 wt.% Polymeric assembly layers 33-36 wt.% Aluminum-plastic-laminate 23-26 wt.% Vegetable oils 15-8 wt.% Red liquid dye 4-2 wt.% Heat-sealing Polymer 0,1-1 wt.% Graphic ink and lacquer 0,1-1 wt.% Adhesive tape + Liner (full) 21-23 wt.%	-
running time	6 months (180 days)	-
Calibration temperature	22 ° C +/- 1 ° C	-
Temporal accuracy under isothermal conditions	+/- 15 %	-
Activation force	5 +/- 2 kgf	-
Recommended temperature / relative humidity	22 ° C / 72 ° F at 20-80% relative humidity	-
Conformities	FDA	21CFR § 177.1520.

D: b.safe Holder for Service life indicator

Properties	Value	Test standard
Colour	nature	-
Mold shrinkage	0,012 mm/mm	ASTM D 955
Density, 73 ° F	1040 kg/m ³	ASTM D 792
Notched impact strength 23 °C	3,5 kJ/m ²	ISO 180/1A
Izod impact strength	25 kJ/m ²	ISO 180/1U
Tensile modulus	1900 MPa	ASTM D 638
Tensile Strength at Yield	22 MPa	ASTM D 638
Elongation at break	20 %	ASTM D 638
Flammability at a nominal 1.5 mm	V-0 class	UL 94
Flammability at thickness 0.8 mm	V-0 class	UL 94
DTUL at 264 psi	65 ° C	ASTM D 648
Vicat temperature	100 ° C	ASTM D 1525
Comparative tracking index	600	IEC 60112
Conformities	FDA	VO 10/2011/EU
	RoHs	2011/65/EU RoHS
	REACH	EC 1907/2006
	BSE/TSE	1774/2002/EG

Color bight yellow

Properties	Value	Test standard
Colour	bright yellow	-
Physical state	firmlly	-
Odor	weak	-
Carrier	Resin ester polymer	-
Softening area	65 - 85 ° C	-
Flash point	> 200 ° C	-
Relativ density	approx. 1,5 g/cm ³	-
Water solubility 20 ° C	insoluble	-
Decomposition temperature	> 280 ° C	-
Reactivity	none	-
Chemical stability	chemically stable	-
Temperature resistance	300 ° C	DIN 53772
Lightfastness	4	DIN EN ISO 4892
Conformities	RoHs	2011/65/EU RoHS
	REACH	EC 1907/2006
	BSE/TSE	1774/2002/EG

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