b.safe

Data sheet
b.safe Waste Cap



BY BOLA

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b.safe Waste Cap

b.safe Waste Caps are especially adapted to the requirements on the collection of solvent waste in HPLC. The PTFE-insert is equipped with several threads (UNF 1/4“, NPT 1/8”) for a direct connection of different tubing diameters by means of Fittings or Hose Connectors. The HPLC waste can be lead directly into a collection container.

The connector GL14 is reserved for the separately available Exhaust Filter. Its activated carbon filling adsorbs solvent vapours which are produced during filling so that no harmful vapours can escape from the collection container.

The PPS screw cap and the PTFE insert are extremely robust and resistant against a thermal or chemical load. Furthermore, they can be sterilized by autoclaving up to 200 °C and also easily be cleaned in the dish washer.

The freely turnable PTFE insert allows a simple container exchange without disarranging the installed capillary tubing and tubes. All tubes and tubing are firmly and tight fixed by Fittings with optimized inner cone and/or non-slip hose connectors.

A Viton® flat sealing provides tight closure of the collection container as it compensates possible production tolerances on the threaded neck. A special sealing lip made of PTFE isolates it from the vapour space. Combined with an Exhaust Filter, b.safe Waste Caps are the perfect protection for the disposal of solvent waste.



A: b.safe Exhaust filter with change indicator

This item is not included in the scope of delivery of b.safe Wase Caps. There is a separate product data sheet for the b.safe exhaust air filter. You can find it here:
https://www.bsafe.de/en/literature/product-data-sheets

B: b.safe Hose Connector

Polypropylen

Properties	Value	Test standard
Colour	nature	-
Mold shinkrage	0,012 mm/mm	ASTM D 955
Density, 73 ° F	1040 kg/m³	ASTM D 792
Notched impact strength 23 °C	3,5 kJ/m²	ISO 180/1A
Izod impact strength	25 kJ/m²	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 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 bright yellow

Properties	Value	Test standard
Colour	bright yellow	-
Physical state	solid	-
Odor	weak	-
Carrier	Resin ester polymer	-
Softening area	65 - 85 ° C	-
Flash point	> 200 ° C	
Relative 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 REACH BSE/TSE	2011/65/EU RoHS EC 1907/2006 1774/2002/EG

B: b.safe Fittings for capillary connection

PFA

Properties	Value	Test standard
Colour	nature	-
Melting point	> 300 °C	ASTM D3418
Melt flow rate	24,0 to 37,0 g/10min	ASTM 3307
Specific weight	2,12 to 2,17	ASTM D792
Tensile strength	> 20,7 MPa	ASTM D638
Expansion	> 275 %	ASTM D638
Conformities	FDA RoHs REACH BSE/TSE	VO 10/2011/EU 2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Color yellow

Properties	Value	Test standard
Colour	yellow	-
Melting point	255-280 °C	D3418
Melt flow rate	6 g/10min	D3159
maximum operating temperature	155 °C	UL746
Hardness	67 Shore D	D2240
Tensile strength	40 MPa	D638
Flame Rating	V-0	UL94
Arc resistance	122 sec	D495
Limitation of the oxygen index	30-32%	D2863
Conformities	RoHs REACH BSE/TSE	2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Color green

Properties	Value	Test standard
Colour	green	-
Melting point	255-280 °C	D3418
Melt flow rate	6 g/10min	D3159
maximum operating temperature	155 °C	UL746
Hardness	67 Shore D	D2240
Tensile strength	40 MPa	D638
Flame Rating	V-0	UL94
Arc resistance	122 sec	D495
Limitation of the oxygen index	30-32%	D2863
Conformities	RoHs REACH BSE/TSE	2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Color purple

Properties	Value	Test standard
Colour	purple	-
Melting point	255-280 °C	D3418
Melt flow rate	6 g/10min	D3159
maximum operating temperature	155 °C	UL746
Hardness	67 Shore D	D2240
Tensile strength	40 MPa	D638
Flame Rating	V-0	UL94
Arc resistance	122 sec	D495
Limitation of the oxygen index	30-32%	D2863
Conformities	RoHs REACH BSE/TSE	2011/65/EU RoHS EC 1907/2006 1774/2002/EG

C: b.safe High-performance PTFE body

Basic body for caps with the following sizes: GL45, S40, S50, S51, S55, S60, B53

Properties	Value	Test standard
Colour	white	-
Material	PTFE	-
Water content	0,02 %	-
Bulk density	500-800 g/l	ASTM D4894
Particle size	600-800 µm	-
Melting point	327±5 °C	ASTM D4894
Fluidity	12-16 s/100g	-
Usage temperature	to 260 °C	-
Sterilization	121 ° C	-
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Basic body for caps with the following sizes: S65, B63

Properties	Value	Test standard
Colour	white	-
Material	PTFE	-
Density	2130 - 2180 g/cm^3	ISO 13000-2
Tensile strength	> 20 MPa	ISO 13000-2
max. elongation at break	> 200 %	ISO 13000-2
Hardness	> 54 Shore D	ISO 13000-2
Constant deformation	6 - 7,5 %	ASTM D621
Volume resistance	10^{18} Ohm	ASTM D257
Operating temperature	-200 / 260 °C	-
Sterilization	121 ° C	-
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Basic body for caps with the following sizes: S70, S90, B83

Properties	Value	Test standard
Colour	white	-
Material	PTFE	-
Bulk density	850 h/l	ASTM D4894
Specific weight	2,17	ASTM D4894
Tensile strength	32 / 4640 MPa / PSI	ASTM D4894
Expansion	310 %	ASTM D4894
Hardness	57 Shore D	-
Particle size Ø	800 µm	-
Recommended form pressure	30-40 MPa	-
Usage temperature	bis 260 °C	-
Sterilization	121 ° C	-
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

D: b.safe Special flat seal

Properties	Value	Test standard
Colour	black	-
Material	FKM	-
Temperature range	-10 - +230 °C	-
Hardness	70-80 SHA	Din ISO 7619-1
Density	1,85-2,05 g/cm^3	-
Tensile strength	9 MPa	DIN 53504
Elongation at break	165-235 %	DIN 53504
short-term peak temperature	275 °C	-
Flame Rating	V0	UL94
Acid resistance	very good	-
Alkali resistance	conditionally	
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

E: b.safe Special cap with labelling field

Screw cap for caps with the following sizes: GL45, S40

Properties	Value	Test standard
Material	PPS reinforced with 40% glass fiber	-
Density	1650 kg/m³	ISO 1183
Bending stress	285 MPa	ISO 178
Rockwell hardness	100 M-Scale	ISO 2039-2
Melting temperature	280 °C	ISO 11357-1
Flammability	V-0	UL94
DTUL ar 1,8 MPa	270 °C	ISO 75-1
DTUL at 8,0 MPa	215 °C	ISO 75-1
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Properties	Value	Test standard
Colour	yellow	-
Carrier material	PPS	-
Temperature resistance	300 °C	-
Lightfastness	6	Blue scale

Screw cap for caps with the following sizes: S50, S55, S60, S65

Properties	Value	Test standard
Material	PP reinforced with 30% glass fiber	-
Density	1120 kg/m³	ISO 1183
Melt flow rate	2 g/10min	ISO 1133
Flexural strength	135 MPA	ISO 178
Tensile stress at break	3,3 %	ISO 527-2
Heat dissipation temperature	143 °C	ISO 75-2
Hardness	112 MPa	ISO 2039
Vicat softening temperature	164 °C	ISO 306
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Properties	Value	Test standard
Colour	Light yellow	-
Carrier material	Resin ester polymer	-
Softening area	65-85 °C	-
Flame Rating	> 200 °C	-
Relative density	ca. 1,15 g/cm3	-
Water solubility	insoluble	-
Decomposition temperature	> 280 °C	-
Conformities	REACH RoHs Class VI	EX/1907/2006 2011/65/EU RoHS USP 35 (88)

Screw cap for the with the following sizes:
S51, S70, S90, B53, B63, B83

Properties	Value	Test standard
Colour	white	
Material	PP	-
Density	0,91 - 1,14 g/cm³	DIN 53479
Odor	geruchlos	-
Melting temperature	165 °C	DIN 53765
Start of thermal decomposition	240 °C	DIN 53765-D-10
Ignition temperature	330 °C	ASTM-D 1929
Conformities	FDA Class VI REACH BST/TSE	177.1520 Plastic EX/1907/2006 999/2001

Screw cap for caps with the following sizes:
S65

Properties	Value	Test standard
Colour	white	
Material	PE	-
Melt index	15 g/10min	ISO 1133
Temperature	190 °C	-
Burden	800 MPa	ISO 527
Yield stress	21 MPa	ISO 527
Density	940 kg/cm³	ISO 1183
Melt temperature	230-280 °C	-
Conformities	FDA Class VI REACH BST/TSE	177.1520 Plastic EX/1907/2006 999/2001

The following features apply for waste caps with a funnel with handle:

Properties	Value	Test standard
Material	PE	-
Melting range	50-140 °C	-
Ignition temperature	> 360 °C	-
Density	0,9-0,97 g/cm³	-
Conformities	FDA RoHs REACH BSE/TSE	VO 10/2011/EU 2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Properties	Value	Test standard
Material	PE-HD	-
Density	0,95 g/cm³	ISO 1183
Yield stress	22 MPa	ISO 527
Elongation at break	300 %	DIN 53455
Flexural strength	32 MPa	DIN 53452
Melting temperature	128 °C	DIN 53736
Thermal conductivity	0,38 W(K*m)	DIN 52612
Operating temperature range	-50 - +80 °C	-
Fire behavior	HB	UL94

Properties	Value	Test standard
Colour	white	-
Material	PTFE	-
Water content	0,02 %	-
Bulk density	500-800 g/l	ASTM D4894
Particle size	600-800 µm	-
Melting point	327±5 °C	ASTM D4894
Fluidity	12-16 s/100g	-
Usage temperature	up to 260 °C	-
Sterilization	121 ° C	-
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Properties	Value	Test standard
Material	PP	-
Colour	nature	-
Mold shinkrage	0,012 mm/mm	ASTM D 955
Density, 73 ° F	1040 kg/m³	ASTM D 792
Notched impact strength 23 °C	3,5 kJ/m²	ISO 180/1A
Izod impact strength	25 kJ/m²	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

Properties	Value	Test standard
Colour	red	-
Physical state	solid	-
Odor	weak	-
Carrier	Polyethylene	-
Softening area	100 - 140 ° C	-
Relativ density	1 - 1,5 g/cm³	-
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

The following features apply for waste caps with automatic filling funnel:

Properties	Value	Test standard
Material	PE	-
Melting range	50-140 °C	-
Ignition temperature	> 360 °C	-
Density	0,9-0,97 g/cm³	-
Conformities	FDA RoHs REACH BSE/TSE	VO 10/2011/EU 2011/65/EU RoHS EC 1907/2006 1774/2002/EG

Properties	Value	Test standard
Material	PE-HD	-
Density	0,95 g/cm³	ISO 1183
Yield stress	22 MPa	ISO 527
Elongation at break	300 %	DIN 53455
Flexural strength	32 MPa	DIN 53452
Melting temperature	128 °C	DIN 53736
Thermal conductivity	0,38 W(K*m)	DIN 52612
Operating temperature range	-50 - +80 °C	-
Fire behavior	HB	UL94

Properties	Value	Test standard
Colour	white	-
Material	PTFE	-
Water content	0,02 %	-
Bulk density	500-800 g/l	ASTM D4894
Particle size	600-800 µm	-
Melting point	327±5 °C	ASTM D4894
Fluidity	12-16 s/100g	-
Usage temperature	up tp 260 °C	-
Sterilization	121 ° C	-
Conformities	FDA RoHs Class VI	CFR 77.1380 2011/65/EU RoHS USP 35 (88)

Properties	Value	Test standard
Material	1.4310	DIN EN 10088
Hardness HB30	< 230 HB	-
Yield strength	> 210 N/mm²	-
Tensile strength	500-750 N/mm²	-
Modulus of elasticity	200 kN/mm²	-
Density	7,90 kg/dm³	-
Electrical resistance	0,73 Ohm	-
Hot forming	900 - 1200 °C	-
Solution heat treatment	1000 - 1100 °C	-

Sophisticated Safety Solutions for HPLC.

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Stand 02/0221

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