RACK-SYSTEMS

The Suitable Storage System for Every Biological Sample
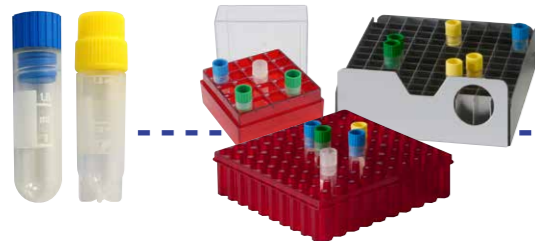
Cryotherm Rack-Systems
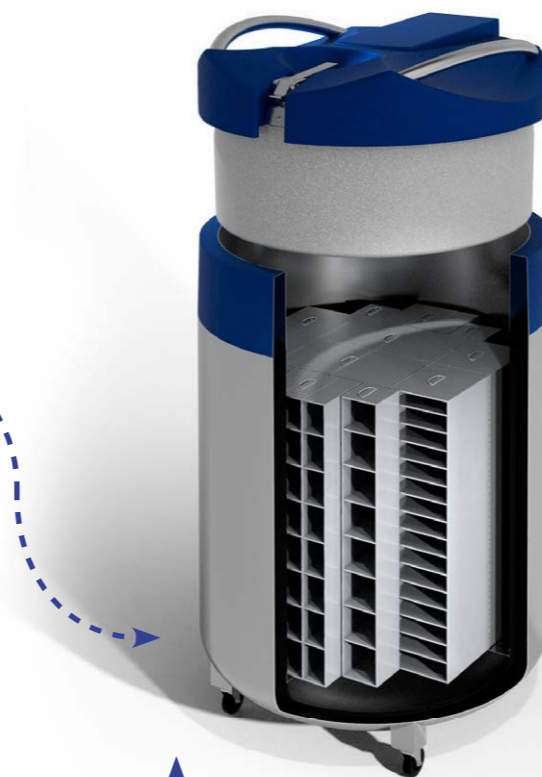
Cryotherm®

For Every Type of Usage

Highly Compact Storage
for Vials, Freezing Bags and Straws

SBS Racks (SBS Boxes)
for Vials / Cryotubes

Drawers and Cryoboxes
for Vials / Cryotubes

- storage of cryotubes in racks / boxes in SBS format
- suitable for all common manufacturers
- value-for-money, highly compact storage without locking at the individual levels
- highly compact and safe storage with spring clip at every individual level
- highly compact and doubly safe through retaining lip in every individual level and extra pivoting drawer bar for central locking
- maximum capacity as adjustable to every type and height

- various sizes (1.0 – 5 ml) in drawers made of aluminium with separator grids or in cryoboxes
- drawers with openings for quick liquid draining and front with extraction opening for easy handling
- cryoboxes made of special plastic with circulation function and crystal clear lid
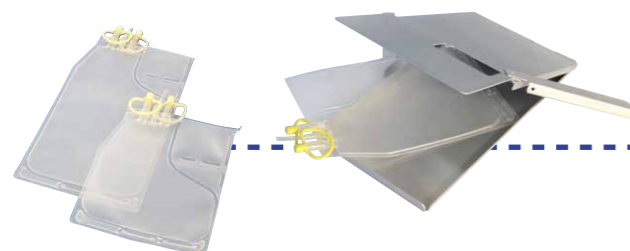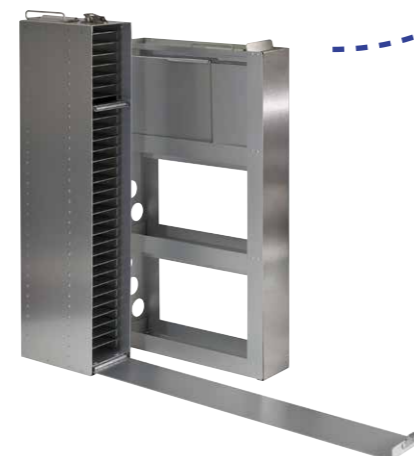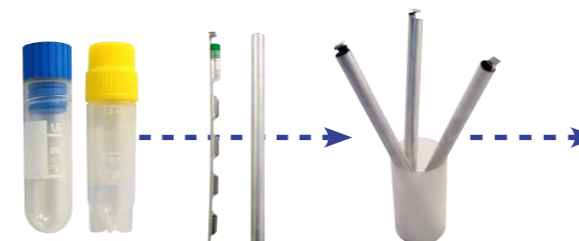
Goblets
for Straws

Cassettes
for Bags

Cane Holder with Cryosleeve in
Goblets for Vials / Cryotubes

- cryo-conservation of semen samples for insemination
- colour coding

- aluminium to create a definite layer thickness for controlled freezing
- **foldable** with hinge on the underside and lock with two **locking leaves** opposite each other
- **window** for label
- with ingenious stage to protect the ports

- for highly compact storage in canisters
- easy-to-handle due to lifter in the canisters
- various sizes: 1.0 – 5 ml

Cryotherm Rack-Systems

Cryotherm®

Biological Samples Optimally Stored:

- Vials / Cryotubes
- Freezing Bags
- Straws

Simple, Flexible and with a System

Convincing advantages:

- high storage capacity
- simple operation
- maximum protection for your samples
- safety through various locking points
- various set heights for flexible use and compatibility with all vessels
- variable arrangements for setting your own order system
- low tare weight due to sturdy aluminium construction
- clarity in the system
- transparency by means of sample management system
- high functionality
- customisation for any sample dimensions in request

For the storage of biological samples in the liquid phase or in the gas phase of liquid nitrogen. There are a large number of diverse sample packages by various manufacturers.

The Cryotherm-Module-System structures your vessels and makes safe storage easy and even more clear. All the storage racks ensure universal application.

Of course, customer specific solutions are possible – please ask for details!

In order to ensure an even distribution of heat within the storage racks they are made of aluminium. Another strong point of this material is its low weight and easier handling.

Rack of **stainless steel** with **uneven heat distribution**:

Cryotherm rack of **aluminium** with **even heat distribution**:

temperature in °C
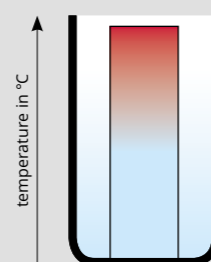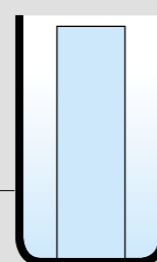
Cryo vessels

BIOSAFE® Vessels

were developed especially for cryogenic long-term preserving in laboratories and cryobanks.

Safe cold down to -180°C in the gas phase and the inert atmosphere enable unproblematic freezing and storage of valuable medical and biological samples and materials.

- full storage capacity for gas phase storage
- nitrogen reserve under the platform suffices dependent on size of vessel for up to two weeks
- redundant hardware for software-independent monitoring of minimum- and maximum-alarm
- low temperatures of -180°C whether in small or large vessels and whether in wide-neck vessels or vessels with a carousel
- service for initial start-up and execution of qualification (IQ/OQ)
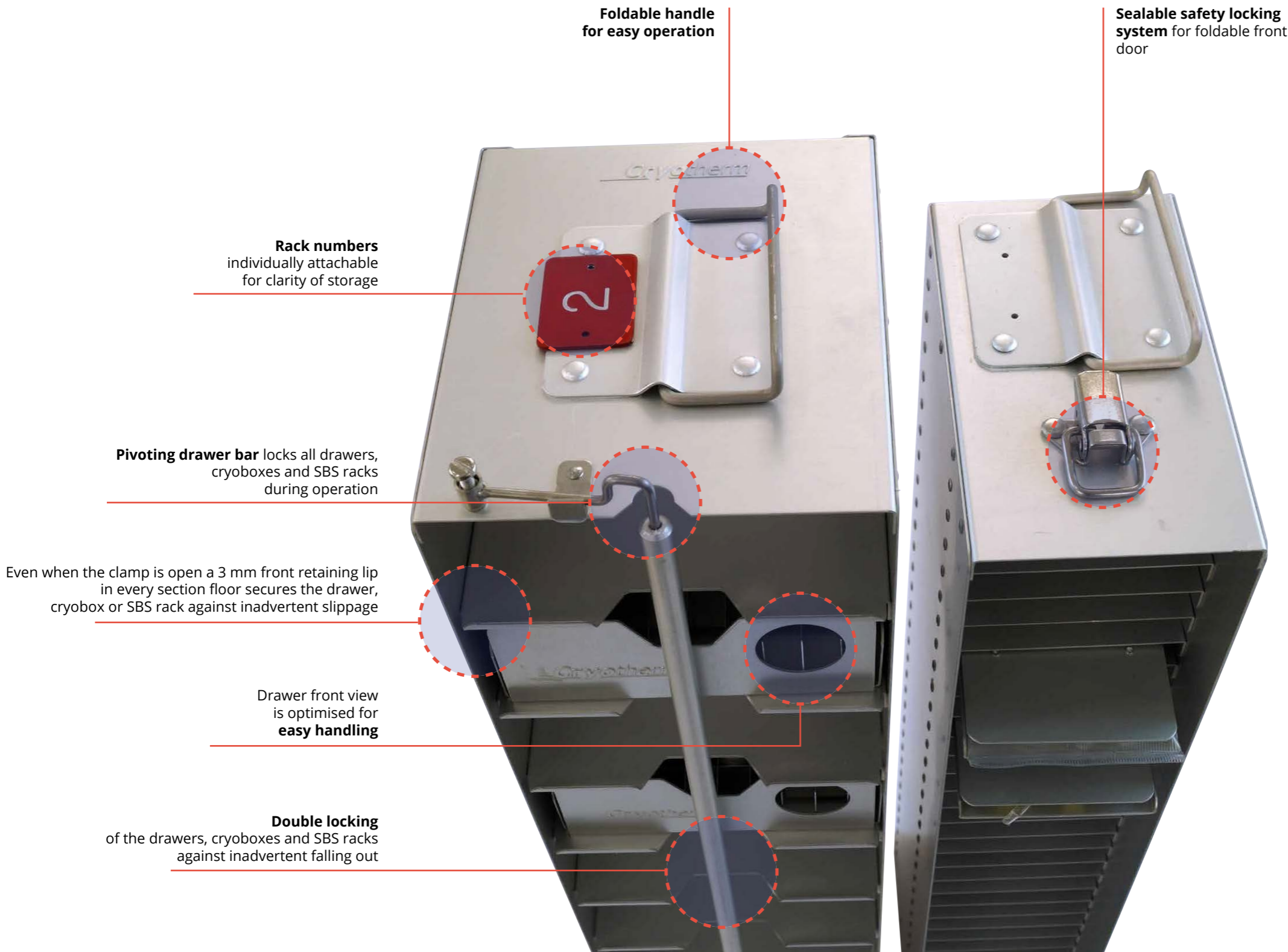- service hotline

BIOSAFE® MDß

Cryotherm

BIOSAFE®

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Stored Safely

With Cryo-Storage Handling Safety
of the Samples is the Highest Priority

The Various Cryotherm Safety Systems
Protect Your Material

**Foldable handle
for easy operation**

**Sealable safety locking
system** for foldable front
door

Rack numbers
individually attachable
for clarity of storage

Pivoting drawer bar locks all drawers,
cryoboxes and SBS racks
during operation

Even when the clamp is open a 3 mm front retaining lip
in every section floor secures the drawer,
cryobox or SBS rack against inadvertent slippage

Drawer front view
is optimised for
easy handling

Double locking
of the drawers, cryoboxes and SBS racks
against inadvertent falling out

Storage Capacity BIOSAFE® 120-220-420

Cryotherm®

Storage in Drawers

Inside Height = 625 mm
Vials / Cryotubes of 2 ml: Racks with 10 Levels
Vials / Cryotubes of 5 ml: Racks with 5 Levels

Storage in Cryoboxes

Inside Height = 625 mm
Vials / Cryotubes of 2 ml: Racks with 10 Levels
Vials / Cryotubes of 5 ml: Racks with 5 Levels

a) b)

Rack of aluminium with 10 levels for vials

and pivoting drawer bar for the storage of

a) 2 ml vials in drawers with grid

   dimensions (HxWxD): 620 x 140 x 166 mm

b) 2 ml vials in drawers with grid

   dimensions (HxWxD): 620 x 85 x 85 mm

c) d)

Rack of aluminium with 5 levels for vials

and pivoting drawer bar for the storage of

c) 5 ml vials in drawers with grid

   dimensions (HxWxD): 620 x 140 x 166 mm

d) 5 ml vials in drawers with grid

   dimensions (HxWxD): 620 x 85 x 85 mm

e) f)

Rack of aluminium with 10 levels for vials

and pivoting drawer bar for the storage of

e) 2 ml vials in cryoboxes

   dimensions (HxWxD): 620 x 140 x 145 mm

f) 2 ml vials in cryoboxes

   dimensions (HxWxD): 620 x 85 x 85 mm

g) h)

Rack of aluminium with 5 levels for vials

and pivoting drawer bar for the storage of

g) 5 ml vials in cryoboxes

   dimensions (HxWxD): 620 x 140 x 145 mm

h) 5 ml vials in drawers with grid

   dimensions (HxWxD): 620 x 85 x 85 mm

Vials / Cryotubes in Drawers Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
a) rack for 2 ml vials in drawers, 10 levels	620 x 140 x 166	78202837	1, 2, 3	5	10	18
plus: drawer with grid for 2 ml vials, 120 pcs, Ø 12 mm	50 x 132 x 157	77031481		50	100	180
or drawer with grid for 2 ml vials, 80 pcs, Ø 14 mm	50 x 132 x 157	77031482		50	100	180
b) rack for 2 ml vials, 25 per level, 10 levels	620 x 85 x 85	78202835	1, 2, 3	3	4	6
plus: drawer with grid for 25 pcs 2 ml- / 5 ml vials	50 x 75 x 75	78202839		30	40	60
or cryobox, grid 5x5, for 25 pcs 2 ml vials	52 x 75 x 75	78212860		30	40	60
maximum storage capacity for 2 ml vials, Ø 12 mm				**6,750**	**13,000**	**23,100**
c) rack for 5 ml vials in drawers, 5 levels	620 x 140 x 166	78202838	1, 2, 3	5	10	18
plus: drawer with grid for 5 ml vials, 120 pcs, Ø 12 mm	100 x 132 x 157	77031483		25	50	90
or drawer with grid for 5 ml vials, 80 pcs, Ø 12 mm	100 x 132 x 157	77031484		25	50	90
d) rack for 5 ml vials, 25 per level, 5 levels	620 x 85 x 85	78202836	1, 2, 3	3	4	6
plus: drawer with grid for 25 pcs 2 ml- / 5 ml vials	50 x 75 x 75	78202839		15	20	30
maximum storage capacity for 5 ml vials, Ø 12 mm				**3,375**	**6,500**	**11,550**

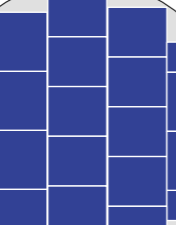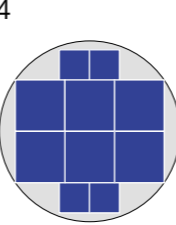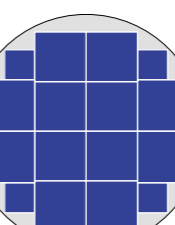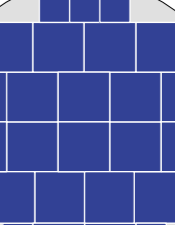| Vials / Cryotubes in Cryoboxes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
e) rack for 2 ml vials in cryoboxes, 81/100, 10 levels	620 x 140 x 145	78202833	4, 5, 6	6	12	20
plus: cryobox grid 10x10 for 100 pcs 2 ml vials	53 x 132 x 132	78212859		60	120	200
or cryobox grid 9x9 for 81 pcs for 2 ml vials	53 x 132 x 132	78214364		60	120	200
f) rack for 2 ml vials, 25 per level, 10 levels	620 x 85 x 85	78202835	4, 5, 6	4	4	7
plus: cryobox grid 5x5 for 25 pcs 2 ml vials	52 x 75 x 75	78212860		40	40	70
maximum storage capacity for 2 ml vials Ø 12 mm				**7,000**	**13,000**	**21,750**
g) rack for 5 ml vials in cryoboxes 81, 5 levels	620 x 140 x 145	78202834	4, 5, 6	6	12	20
plus: cryobox grid 9x9 for 81 pcs 5 ml vials	95 x 132 x 132	78215707		30	60	100
h) rack for 5ml vials, 25 per level, 5 levels	620 x 85 x 85	78202836	4, 5, 6	4	4	7
plus: drawer with grid for 25 pcs 2 ml- / 5 ml vials	50 x 75 x 75	78202839		20	20	35
maximum storage capacity for 5ml vials Ø 12 mm				**2,930**	**5,360**	**8,875**

BIOSAFE® 120
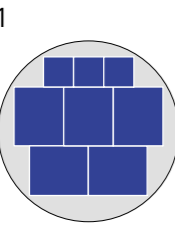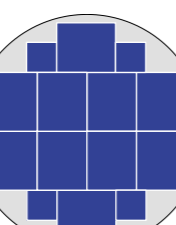
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BIOSAFE® 220

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BIOSAFE® 420

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BIOSAFE® 120

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BIOSAFE® 220

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BIOSAFE® 420

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Storage Capacity BIOSAFE® 120-220-420

Cryotherm®

Storage of Freezing Bags in Cassettes

Inside Height = 625 mm
with 32 Levels

Storage of Freezing Bags in Cassettes

Inside Height = 625 mm
in 3 and 4 Levels

**Freezing bag rack
of aluminium with
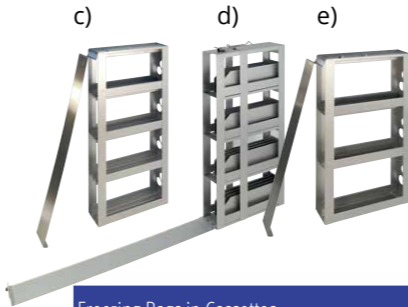32 levels**

a)

dimensions (HxWxD):
575 x 95 x 165 mm

b)

**Freezing bag rack of
aluminium with 10 levels**

and pivoting drawer bar
for the storage of

2 ml vials in drawers with
grid

dimensions (HxWxD):
620 x 85 x 85 mm

Freezing Bags in Cassettes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
a) rack freezing bags in 32 levels	575 x 95 x 165	77031511	7, 8, 9	9	16	26
plus: cassette for freezing bags 4R9951, CryoMACS 50	161 x 85 x 12	77031514		288	512	832
b) rack for 2 ml vials, 25 per level, 10 levels	620 x 85 x 85	78202835	9	---	---	6
or: rack for 5 ml vials, 25 per level, 5 levels	620 x 85 x 85	78202836	9	---	---	6
maximum storage capacity for freezing bags 4R9951, CryoMACS 50				**288**	**512**	**832**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**---**	**---**	**1,500**

c)   d)   e)

**Freezing bag
rack of aluminium**

c) **with 4 levels** 620 x
80 x 280 mm
d) **with 4 levels**
620 x 80 x 285 mm
e) **with 3 levels**
580 x 80 x 305 mm

f)   g)

Freezing bag rack of aluminium
with pivoting drawer bar

f) **with 10 levels,** 2 ml vials in drawers
with grid
620 x 85 x 85 mm
g) **with 5 levels,** 5 ml vials in drawers
with grid
620 x 85 x 85 mm

| Freezing Bags in Cassettes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
c) rack freezing bags in 4 levels, 4 x 3 double sections	620 x 80 x 280	78202831	10, 11, 12	6	10	20
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		144	240	480
d) rack freezing bags in 4 levels, 4 x 5 single sections	620 x 80 x 285	78213389	10, 11, 12	6	10	20
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		120	200	400
f) rack for 2 ml vials 25 per level, 10 levels	620 x 85 x 85	78202835	10, 11, 12	2	4	2
g) rack for 5 ml vials 25 per level, 5 levels	620 x 85 x 85	78202836	10, 11, 12	2	4	2
maximum storage capacity for freezing bags 4R9955, 4R9953, CryoMACS 500				**144**	**240**	**480**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**500**	**1,500**	**500**
e) rack freezing bags in 3 levels, for 15 pcs Hemofreeze type Z 2003 / DF 700	580 x 80 x 305	78202832	13, 14, 15	5	10	18
plus: cassette for freezing bags Hemofreeze type Z 2003 / DF 700	300 x 160 x 12	77031509		75	150	270
f) rack for 2ml vials 25 per level 10 levels	620 x 85 x 85	78202835	13, 14, 15	3	2	2
g) rack for 5ml vials 25 per level 5 levels	620 x 85 x 85	78202836	13, 14, 15	3	2	2
maximum storage capacity for freezing bags Hemofreeze type Z 2003 / DF 700				**75**	**150**	**270**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**750**	**500**	**500**
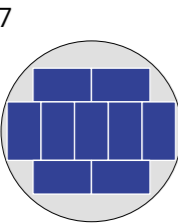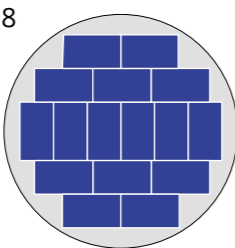
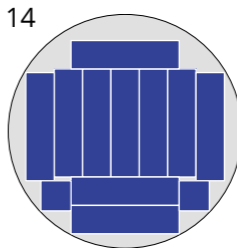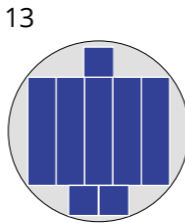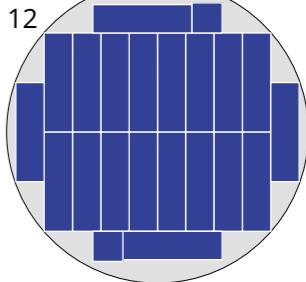BIOSAFE® 120   BIOSAFE® 220   BIOSAFE® 420
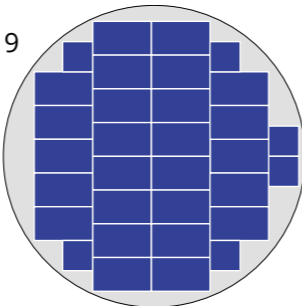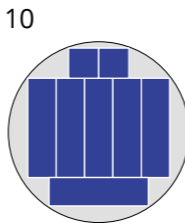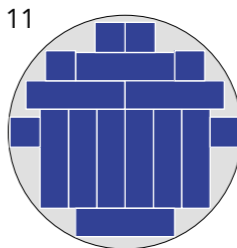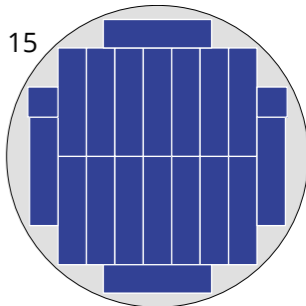
10   11   12

BIOSAFE® 120   BIOSAFE® 220   BIOSAFE® 420

7   8   9

13   14   15

Storage of Vials / Cryotubes in Boxes / Racks in SBS Format
(Description: Matrixbox / Wellplate / Microtiterplates)
with the Basic Dimensions 127.76 x 85.48 mm

For the Storage of Straws (0.25 ml / 0.5 ml)
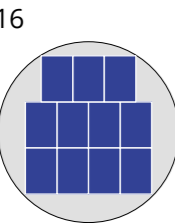in Flat Cassettes / Goblets

Racks of aluminium for SBS racks

a) with 19/14/9 levels without pivoting drawer bar
620 x 89 x 130 mm

b) with 19/14/9 levels with spring clips
620 x 89 x 130 mm

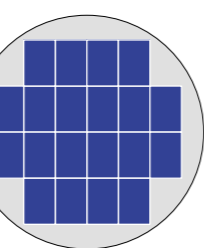c) with 16/13/9 levels with pivoting drawer bar
620 x 89 x 145 mm

a) **Canister of aluminium for goblets**
with lifter
Ø 70 x 620 mm

b) **Goblets**
Ø 65 x 120 mm

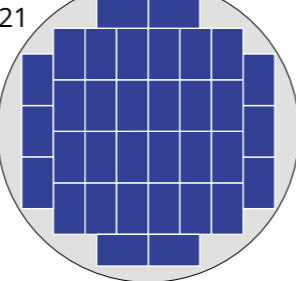| SBS Racks (127.76x85.48) in Racks Without Pivoting Drawer Bars or Spring Clips in Each Level or Level and Pivoting Drawer Bars Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
a) rack for SBS racks (20-30 mm high), 19 levels without locking	620 x 89 x 130	*	16, 17, 18	11	20	40
rack for SBS racks (30-40 mm high), 14 levels without locking	620 x 89 x 130	*	16, 17, 18	11	20	40
rack for SBS racks (40-62 mm high), 9 levels without locking	620 x 89 x 130	*	16, 17, 18	11	20	40
b) rack for SBS racks (20-30 mm high), 19 levels with spring clips	620 x 89 x 130	*	16, 17, 18	11	20	40
rack for SBS racks (30-40 mm high), 14 levels with spring clips	620 x 89 x 130	*	16, 17, 18	11	20	40
rack for SBS racks (40-62 mm high), 9 levels with spring clips	620 x 89 x 130	*	16, 17, 18	11	20	40
c) rack for SBS racks (20-30 mm high), 16 levels with pivoting drawer bar	620 x 89 x 145	*	19, 20, 21	10	18	34
rack for SBS racks (30-40 mm high), 13 levels with pivoting drawer bar	620 x 89 x 145	*	19, 20, 21	10	18	34
rack for SBS racks (40-62 mm high), 9 levels with pivoting drawer bar	620 x 89 x 145	*	19, 20, 21	10	18	34

* on request

Straws in Canisters Description	Dimensions (Ø x H) [mm]	Article-No.	Layout	BIOSAFE® 120 Capacity	BIOSAFE® 220 Capacity	BIOSAFE® 420 Capacity
a) canister for goblets with lifter, 620 mm high, max. 4 goblets	Ø 70 x 620	78213016	22, 23, 24	38	63	110
plus: b) goblet diameter 65 mm, 120 mm high	Ø 65 x 120	78212792		152	252	440
maximum storage capacity for straws 0.25 ml				**85,120**	**141,120**	**246,400**
maximum storage capacity for straws 0.5 ml				**31,920**	**52,920**	**92,400**

Explanatory note: 1 goblet (Ø 65 x 120 mm) contains max. 560 pieces 0.25 ml straws or max. 210 pieces 0.5 ml straws

BIOSAFE® 120
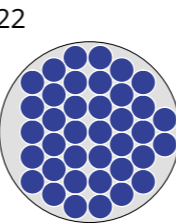
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BIOSAFE® 220

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BIOSAFE® 420

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BIOSAFE® 120

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BIOSAFE® 220

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BIOSAFE® 420

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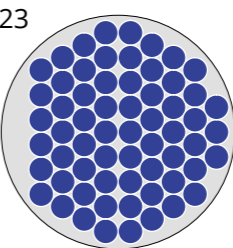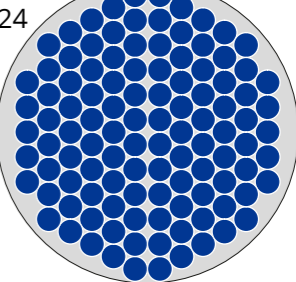
Storage in Drawers

Inside Height = 680, 800, 1100 mm
Vials / Cryotubes with 2 ml: Racks with 12, 13, 18 Levels
Vials / Cryotubes with 5 ml: Racks with 6, 7, 10 Levels

Storage in Cryoboxes

Inside Height = 680, 800, 1100 mm
Vials / Cryotubes with 2 ml: Racks with 12, 13, 18 Levels

a) b) c) d)

Rack of aluminium for vials
a) for 2 ml vials with 12/13/18 levels in drawers
b) for 2 ml vials with 11/13/18 levels, 25 per level
c) for 5 ml vials with 6/7/10 levels in drawers
d) for 5 ml vials with 6/7/10 levels, 25 per level

e) f)

Rack of aluminium for vials
e) for 2 ml vials with 12/13/18 levels in cryoboxes
f) for 2 ml vials with 11/13/18 levels, 25 per level

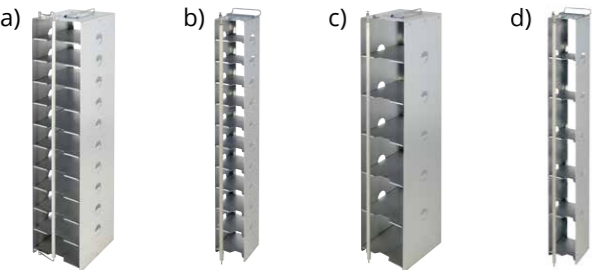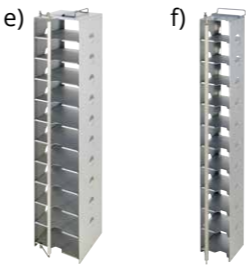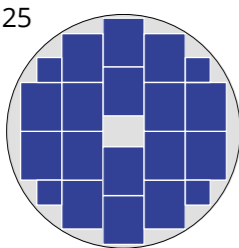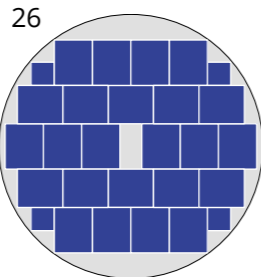| Vials / Cryotubes in Drawers — Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
a) rack for 2 ml vials in drawers, 12 levels	727 x 140 x 166	78220222	26, 27	---	24	34	---
rack for 2 ml vials in drawers, 13 levels	800 x 140 x 166	78214754	25	16	---	---	---
rack for 2 ml vials in drawers, 18 levels	1100 x 140 x 166	78221089	27	---	---	---	34
plus: drawer with grid for 2 ml vials, 120 pcs, Ø 12 mm	50 x 132 x 157	77031481		208	288	408	612
plus: drawer with grid for 2 ml vials, 80 pcs, Ø 14 mm	50 x 132 x 157	77031482		208	288	408	612
b) rack for 2 ml vials 25 per level, 11 levels	680 x 85 x 85	78213481	26, 27	---	4	8	---
rack for 2 ml vials 25 per level, 13 levels	800 x 85 x 85	78214755	25	4	---	---	---
rack for 2 ml vials 25 per level, 18 levels	1100 x 85 x 85	78221090	27	---	---	---	8
plus: drawer with grid for 25 pcs, 2 ml / 5 ml vials	50 x 75 x 75	78202839		52	44	88	144
or cryobox, grid 5x5 for 25 pcs, 2 ml vials	52 x 75 x 75	78212860		52	44	88	144
maximum storage capacity for 2 ml vials Ø 12 mm				**26,260**	**35,660**	**51,160**	**77,040**
c) rack for 5 ml vials in drawers 6 levels	680 x 140 x 166	77031480	26, 27	---	24	34	---
rack for 5 ml vials in drawers 7 levels	800 x 140 x 166	78215713	25	16	---	---	---
rack for 5 ml vials in drawers 10 levels	1100 x 140 x 166	78209913	27	---	---	---	34
plus: drawer with grid for 5 ml vials 120 pcs, Ø 12 mm	100 x 132 x 157	77031483		112	144	204	340
or drawer with grid for 5 ml vials 80 pcs Ø 14 mm	100 x 132 x 157	77031484		112	144	204	340
d) rack for 5 ml vials 25 per level, 6 levels	680 x 85 x 85	78215714	26, 27	---	4	8	--
rack for 5 ml vials 25 per level, 7 levels	800 x 85 x 85	78215715	25	4	---	---	---
rack for 5 ml vials 25 per level, 10 levels	1100 x 85 x 85	78215716	27	---	---	---	8
plus: drawer with grid for 25 pcs 2 ml / 5 ml vials	50 x 75 x 75	78202839		28	24	48	80
maximum storage capacity for 5 ml vials Ø 12 mm				**14,140**	**17,880**	**25,680**	**42,800**

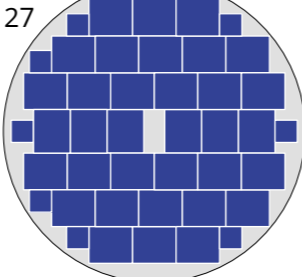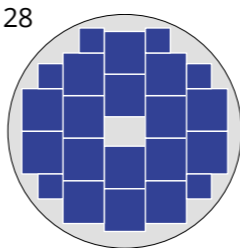| Vials / Cryotubes in Cryoboxes — Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
e) rack for 2 ml vials in cryoboxes, 81/100, 12 levels	727 x 140 x 145	78215717	29, 30	---	26	38	---
rack for 2 ml vials in cryoboxes, 81/100, 13 levels	800 x 140 x 145	78213935	28	16	---	---	---
rack for 2 ml vials in cryoboxes, 81/100, 18 levels	1100 x 140 x 145	78215718	30	---	---	---	38
plus: cryobox grid 10x10 for 100 pcs 2 ml vials	53 x 132 x 132	78212859		208	312	456	684
or cryobox grid 9x9 for 81 pcs 2 ml vials	53 x 132 x 132	78214364		208	312	456	684
f) rack for 2 ml vials 25 per level, 11 levels	680 x 85 x 85	78213481	29, 30	---	12	4	---
rack for 2 ml vials 25 per level, 13 levels	800 x 85 x 85	78214755	28	6	---	---	---
rack for 2 ml vials 25 per level, 18 levels	1100 x 85 x 85	78221090	30	---	---	---	4
plus: drawer with grid for 25 pcs 2 ml / 5 ml vials	50 x 75 x 75	78202839		78	132	44	72
or cryobox grid 5x5 for 25 pcs, 2 ml vials	52 x 75 x 75	78212860		78	132	44	72
maximum storage capacity for 2 ml vials Ø 12 mm				**22,750**	**32,100**	**46,700**	**70,200**

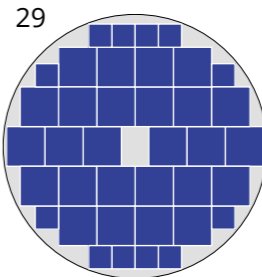BIOSAFE® 500 — 25

BIOSAFE® 600 — 26

BIOSAFE® 1000/1400 — 27

BIOSAFE® 500 — 28

BIOSAFE® 600 — 29

BIOSAFE® 1000/1400 — 30

Racks for Freezing Bags in Cassettes

Freezing bag rack of aluminium with 40 levels a) b)

dimensions (HxWxD): 715 x 95 x 165 mm

Freezing bag rack of aluminium with 45 levels c)

dimensions (HxWxD): 800 x 95 x 165 mm

Freezing bag rack of aluminium with 60 levels

dimensions (HxWxD): 1100 x 95 x 165 mm

Freezing Bags in Cassettes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
a) rack for freezing bags in 40 levels	715 x 95 x 165	78215708	32, 33	---	36	52	---
b) rack for freezing bags in 45 levels	800 x 95 x 165	78215709	31	24	---	---	---
c) rack for freezing bags in 60 levels	1100 x 95 x 165	78215710	33	---	---	---	52
plus: cassette for freezing bags 4R9951, CryoMACS 50	161 x 85 x 12	77031514		1,080	1,440	2,080	3,120
rack for 2 ml vials 25 per level, 11 levels	680 x 85 x 85	78213481		---	2	---	---
rack for 2 ml vials 25 per level, 13 levels	800 x 85 x 85	78214755		2	---	---	---
rack for 2 ml vials 25 per level, 18 levels	1100 x 85 x 85	78221090		---	---	---	---
plus: drawer with grid for 25 pcs 2 ml / 5 ml vials	50 x 75 x 75	78202839		26	22	---	---
or cryobox grid 5x5 for 25 pcs, 2 ml vials	52 x 75 x 75	78212860		26	22	---	---
maximum storage capacity for freezing bags 4R9951, CryoMACS 50		**77031514**		**1,080**	**1,440**	**2,080**	**3,120**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**650**	**550**	**---**	**---**

Racks for Freezing Bags in Cassettes

d) e)

Freezing bag rack of aluminium with 4 levels

d) 4 x 3 double sections dimensions (HxWxD): 620 x 80 x 280 mm

e) 4 x 5 single sections dimensions (HxWxD): 620 x 80 x 285 mm

f) **Freezing bag rack of aluminium with 5 levels**

5 x 2 double sections dimensions (HxWxD): 780 x 52 x 280 mm

g) **Freezing bag rack of aluminium with 7 levels**

7 x 3 double sections dimensions (HxWxD): 1100 x 80 x 280 mm

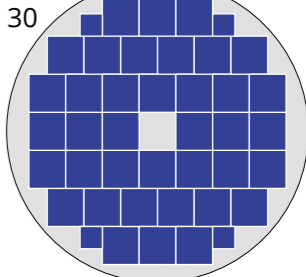| Freezing Bags in Cassettes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
d) rack for freezing bags in 4 levels 4 x 3 double sections	620 x 80 x 280	78202831	35, 36	---	24	36	---
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		---	576	864	---
e) rack for freezing bags in 4 levels 4 x 5 single sections	620 x 80 x 285	78213389		---	24	36	---
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		---	480	720	---
f) rack for freezing bags in 5 levels 5 x 2 double sections	780 x 52 x 280	78214757	34	24	---	---	---
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		480	---	---	---
g) rack for freezing bags in 7 levels 7 x 3 double sections	1100 x 80 x 280	78215711	36	---	---	---	36
plus: cassette for freezing bags 4R9955, 4R9953, CryoMACS 500	270 x 140 x 12	77031488		---	---	---	1,512
rack for 2 ml vials 25 per level, 11 levels	680 x 85 x 85	78213481	35, 36	---	2	4	---
rack for 2 ml vials 25 per level, 13 levels	800 x 85 x 85	78214755		4	---	---	---
rack for 2 ml vials 25 per level, 18 levels	1100 x 85 x 85	78221090	36	---	---	---	4
plus: drawer with grid for 25 pcs 2 ml / 5 ml vials	50 x 75 x 75	78202839		52	22	44	72
or cryobox grid 5x5 for 25 pcs, 2 ml vials	52 x 75 x 75	78212860		52	22	44	72
max. storage capacity f. freezing p. 4R9955, 4R9953, CryoMACS 500		**77031488**		**480**	**576**	**864**	**1,512**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**1,300**	**550**	**1,100**	**1,800**

BIOSAFE® 500   BIOSAFE® 600   BIOSAFE® 1000/1400

31   32   33

BIOSAFE® 500   BIOSAFE® 600   BIOSAFE® 1000/1400

34   35   36
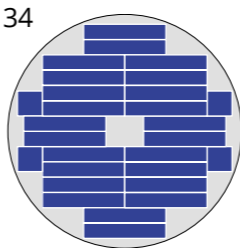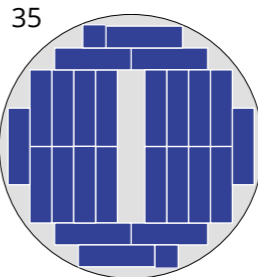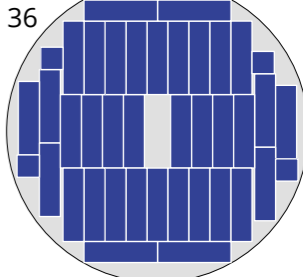
Racks for Freezing Bags in Cassettes

For Storage of Vials / Cryotubes in Boxes / Racks in SBS Format
(Description: Maxtrixbox / Wellplate / Microtiterplates)
with the Basic Dimensions = 127.76 x 85.48 mm

a)

**Freezing bag rack
of aluminium
with 2 levels**

dimensions (HxWxD):
680 x 140 x 166 mm

b)

**Freezing bag rack
of aluminium
with 3 levels**
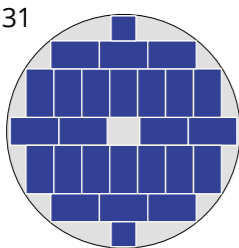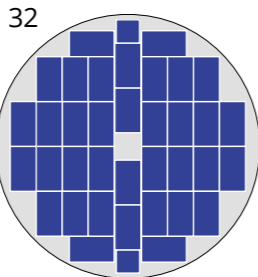
dimensions (HxWxD):
1100 x 140 x 166 mm

Racks of aluminium for SBS racks
a) without locking
620 x 89 x 130 mm / 800 x 89 x 130 mm /
1100 x 89 x 130 mm
b) with spring clips
620 x 89 x 130 mm / 800 x 89 x 130 mm /
1100 x 89 x 130 mm

Freezing Bags in Cassettes Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
a) rack for freezing bags in 2 levels, for 18 pcs Hemofreeze type Z 2003	680 x 140 x 166	77031508	25, 26, 27	16	24	34	---
b) rack for freezing bags in 3 levels, for 27 pcs Hemofreeze type Z 2003	1100 x 140 x 166	78215712	27	---	---	---	34
plus: cassette for freezing bags Hemofreeze type Z 2003	300 x 160 x 12	77031509		288	432	612	918
rack for 2 ml vials 25 per level, 11 levels	680 x 85 x 85	78213481	26	--	4	8	--
rack for 2 ml vials 25 per level, 13 levels	800 x 85 x 85	78214755	25	4	--	--	--
rack for 2 ml vials 25 per level, 17 levels	1100 x 85 x 85	78213385	27	--	--	--	8
plus: drawer with grid for 25 pcs 2 ml / 5ml vials	50 x 75 x 75	78202839		52	44	88	144
or cryobox grid 5x5 for 25 pcs, 2 ml vials	52 x 75 x 75	78212860		52	44	88	144
maximum storage capacity f. freezing p. Hemofreeze type Z 2003		**77031509**		**288**	**432**	**612**	**918**
plus: maximum storage capacity for 2 ml vials Ø 12 mm				**1,300**	**1,100**	**2,200**	**3,600**

SBS Racks (127.76 x 85.48) in Racks Without Locking or with Spring Clips in Each Level or with Levels and Clamps Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
a) rack for SBS racks (20-30 mm high) 21 levels, without locking	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (30-40 mm high) 16 levels, without locking	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (40-62 mm high) 10 levels, without locking	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (20-30 mm high) 24 levels, without locking	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (30-40 mm high) 18 levels, without locking	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (40-62 mm high) 12 levels, without locking	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (20-30 mm high) 12 levels, without locking	1100 x 89 x 130	*	39	---	---	---	72
rack for SBS racks (30-40 mm high) 26 levels, without locking	1100 x 89 x 130	*	39	---	---	---	72
rack for SBS racks (40-62 mm high) 17 levels, without locking	1100 x 89 x 130	*	39	---	---	---	72
b) rack for SBS racks (20-30 mm high) 21 levels, with spring clips	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (30-40 mm high) 16 levels, with spring clips	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (40-62 mm high) 10 levels, with spring clips	680 x 89 x 130	*	38, 39	---	48	72	---
rack for SBS racks (20-30 mm high) 24 levels, with spring clips	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (30-40 mm high) 18 levels, with spring clips	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (40-62 mm high) 12 levels, with spring clips	800 x 89 x 130	*	37	30	---	---	---
rack for SBS racks (20-30 mm high) 12 levels, with spring clips	1100 x 89 x 130	*	39	---	---	---	72
rack for SBS racks (30-40 mm high) 26 levels, with spring clips	1100 x 89 x 130	*	39	---	---	---	72
rack for SBS racks (40-62 mm high) 17 levels, with spring clips	1100 x 89 x 130	*	39	---	---	---	72

* on request

BIOSAFE® 500
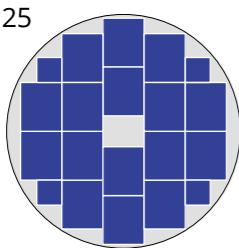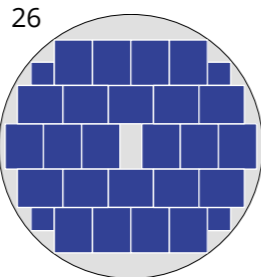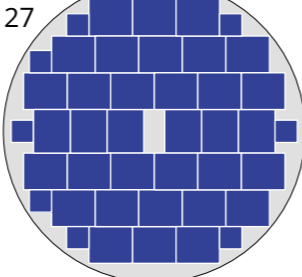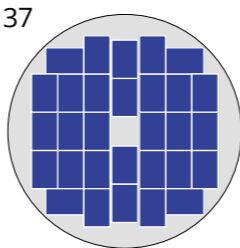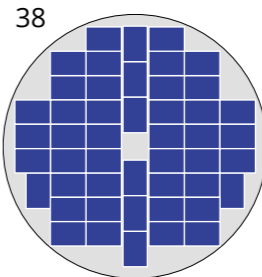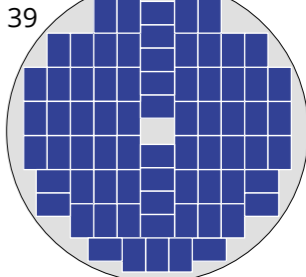
25

BIOSAFE® 600

26

BIOSAFE® 1000/1400

27

BIOSAFE® 500

37

BIOSAFE® 600

38

BIOSAFE® 1000/1400

39

For Storage of Vials / Cryotubes in Boxes / Racks in SBS Format
(Description: Maxtrixbox / Wellplate / Microtiterplates)
with the Basic Dimensions = 127.76 x 85.48 mm

For Storage of Straws (0.25 ml / 0.5 ml)
in Flat Cassettes / Goblets

Racks of aluminium for SBS racks

c) with pivoting drawer bar
   620 x 89 x 145 mm
   800 x 89 x 145 mm
   1100 x 89 x 145 mm

a) **Canister of aluminium for goblets**
with lifter
Ø 70 x 620 mm

b) **Canister of aluminium for goblets**
with lifter
Ø 70 x 800 mm

c) **Canister of aluminium for goblets**
with lifter
Ø 70 x 1100 mm

SBS Racks (127.76 x 85.48) in Racks Without Locking or with Spring Clips in Each Level or with Levels and Clamps Description	Dimensions (H x W x D) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
c) rack for SBS racks (20-30 mm high), 18 levels, with pivoting drawer bar	680 x 89 x 145	*	41, 42	---	42	64	---
rack for SBS racks (30-40 mm high), 14 levels, with pivoting drawer bar	680 x 89 x 145	*	41, 42	---	42	64	---
rack for SBS racks (40-62 mm high), 9 levels, with pivoting drawer bar	680 x 89 x 145	*	41, 42	---	42	64	---
rack for SBS racks (20-30 mm high), 21 levels, with pivoting drawer bar	800 x 89 x 145	*	40	28	---	---	---
rack for SBS racks (30-40 mm high), 17 levels, with pivoting drawer bar	800 x 89 x 145	*	40	28	---	---	---
rack for SBS racks (40-62 mm high), 11 levels, with pivoting drawer bar	800 x 89 x 145	*	40	28	---	---	---
rack for SBS racks (20-30 mm high), 30 levels, with pivoting drawer bar	1100 x 89 x 145	*	42	---	---	---	64
rack for SBS racks (30-40 mm high), 23 levels, with pivoting drawer bar	1100 x 89 x 145	*	42	---	---	---	64
rack for SBS racks (40-62 mm high), 16 levels, with pivoting drawer bar	1100 x 89 x 145	*	42	---	---	---	64

* on request

Straws in Canisters Description	Dimensions (Ø x H) [mm]	Article-No.	Layout	BIOSAFE® 500 Capacity	BIOSAFE® 600 Capacity	BIOSAFE® 1000 Capacity	BIOSAFE® 1400 Capacity
a) canister for goblets with lifter 620 mm high, max. 4 goblets	Ø 70 x 620	78213016	44, 45	---	120	212	---
b) canister for goblets with lifter 800 mm high, max. 5 goblets	Ø 70 x 800	78215719	43	100	---	---	---
c) canister for goblets with lifter 1100 mm high, max. 7 goblets	Ø 70 x 1100	78215720	45	---	---	---	212
plus: goblets diameter 65 mm, 120 mm high	Ø 65 x 120	78212792		500	480	848	1,484
maximum storage capacity for straws 0.25 ml				**280,000**	**268,800**	**474,880**	**831,040**
maximum storage capacity for straws 0.5 ml				**105,000**	**100,800**	**178,080**	**311,640**

Explanatory note: 1 goblet (Ø 65 x 120 mm) contains max. 560 pcs 0.25 ml straws or max. 210 pcs 0.5 ml straws

BIOSAFE® 500
40
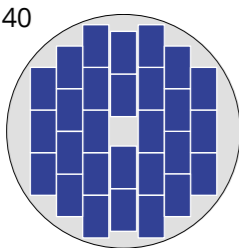
BIOSAFE® 600
41
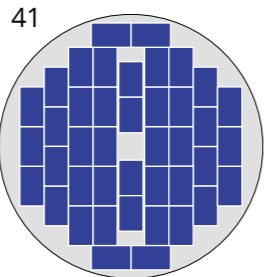
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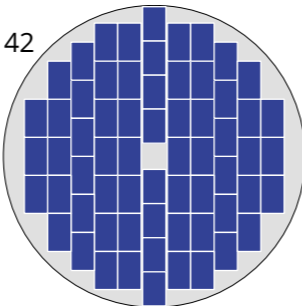
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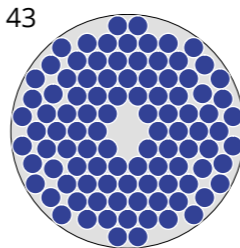
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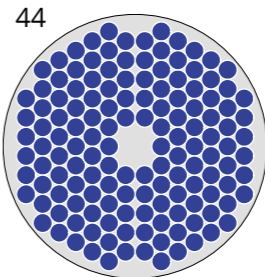
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45
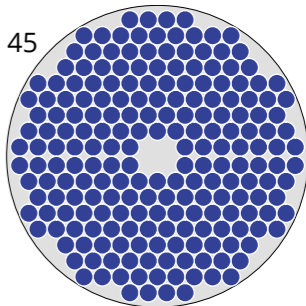
Rack-Numbers (Set) 35 x 25 mm incl. Screws	Article-No.	Colour
1-5	78211733	red
6-10	78211732	blue
11-15	78211731	black
16-20	78211730	red
21-25	78311729	blue
26-30	78202816	black
31-35	78202817	red
36-40	78212510	blue
41-45	78213671	black
46-50	78215212	red
51-55	78215213	blue
56-60	78215214	black
61-65	78215215	Rot

Rack-Numbers (Set) as Chips	Article-No.	Colour
1-4	77031486	black
1-8	77031515	black
1-16	77031487	black
1-24	77031517	black

Cassettes with various locks

Frame for cryotubes and cassettes

Racks for packages and boxes

Rack with swing door
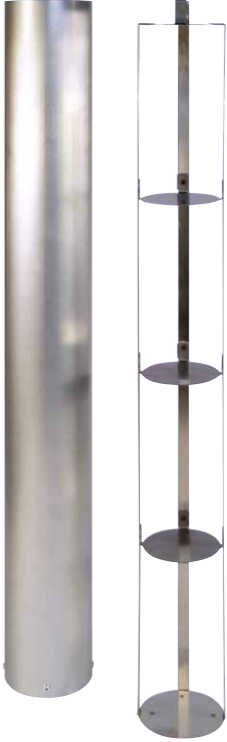
Canister with lifter (4 floors)

Further variations are possible. Please contact us to discuss your requirements.

NITROGEN VESSELS

APOLLO® LIN Supply and Storage Vessel (50 - 350 l) · JUNO® LIN Supply and Storage Vessel (30 l)
SIRIUS® LIN Supply and Storage Vessel (1,000 - 2,000 l) · SATURN® LIN Transport Vessel (50 - 300 l)
MERKUR® LIN Transport Tank (500 - 3,000 l) · STELLA® Working Dewar (0.5 - 10,000 l) · LAB® Dewar Series (4 - 50 l)

BIOSAFE® SYSTEMS / LIFE SCIENCE

BIOSAFE® MD ß Sample Storage System (Medical Product) (120 - 1,400 l) · BIOSAFE® SC ß Sample Storage System (120 - 1,400 l)
BIOSAFE-CONTROL® ß · CRYO-MESSENGER® Remote Monitoring System · BIOSAFE® X/S-Series · Vapor Shipper
STELLA® Working Dewar (0.5 - 10,000 l) · Controlled Rate Freezers (3.3 - 16 l)
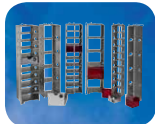
BIOSAFE® RACK-SYSTEMS

Racks · Drawers and Cryoboxes for Vials · Canisters for Straws in Goblets · SBS Boxes (Microtiter)
Cassettes for Freezing Bags

HELIUM VESSELS

HELIOS® LHe Storage Vessel (100 - 15,000 l)
STRATOS® LHe Transport Vessel (100 - 1,000 l) · LHe Siphon

OTHER VESSELS

HYDROS® LH_2 Transport Vessel (1,000 - 15,000 l) · STRATOS® Transport Vessel (100-1,000 l)
APOLLO® Supply and Storage Vessel (50 - 350 l) · MERKUR® Transport Tank (500-3,000 l)
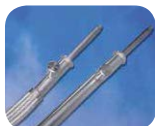
CRYO LINE SYSTEMS

Rigid Line Systems (DN 14-300) · Flexible Line Systems (DN 20-150) · Phase Separator Stations (50 - 200 l)
Gas Separator (5 l) · LHe Multiline

CONTROL AND MONITORING TECHNOLOGY FOR CRYOGENIC GASES

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TRANSPORT COOLING FOR VEHICLES

CRYOGEN® TRANS-SYSTEM

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environmental protection or one of the many other areas of research, we have the specialist staff who know your field
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CRYO ACCESSORIES & AFTER-SALES SERVICE

Accessories · Installation/Assembly · Start Up · Function Qualification IQ / OQ · Repair/Maintenance
Spare Parts Service · Vessel Hire · Instruction/Training · Operating Manual · Service Hotline

Cryotherm®

Contact

Cryotherm GmbH & Co. KG
Euteneuen 4
57548 Kirchen/Sieg
Germany

⊕: www.cryotherm.de

Cryotherm Inc.
5126 South Royal Atlanta Drive
Tucker, GA 30084
USA

⊕: www.cryotherm.de

BIOSAFE® smart

Smart. Stable. Steady.

BIOSAFE® up to 2,400 l

Smart. Stable. Steady.

Outstanding Quality

Manufactured in Germany to the highest standards for medical devices (compliant to directive MDD 93/42 EEC), the BIOSAFE® features a comfortable finish that is optimised for aseptic environments.

Made for More

Manifold possibilities to mount additional redundant sensors.

Zero-Gravity Lid

A convenient spring supported lid lets you open the freezer with one hand and zero effort. Keeps your handsfree, just move it to the side.

Best in Class Capacity

Store up to 120,000 2ml vials – more than ever before.

exemplary illustration

Sophisticated Ergonomics

Secure steps, supporting hand grips, and a user friendly low operating height ensure easy accessibility and safety at all times.

Advanced Economy

Our special vacuum super insulation minimises your spread of liquid nitrogen. Our industry-leading evaporation rates save resources.

BIOSAFE® smart

Smart. Stable. Steady.

Your Biobanking 4.0 – Our Best Biobank Yet

Cryotherm®
life science

Big Data
Log and monitor all events and extract data to gain critical insights about your samples.

100% Control
Locks the lid automatically. Twofold access control via RFID transponder and PIN. Logs all activities on the freezer. Complies to GMP FDA CRF 21 part 11.

Touch Screen
Intuitive multifunctional 8,8" panel with touch colour display. Bright and energy efficient.

Best Construction
Protected by sturdy glass panel, ideal for aseptic and medical environments.

High Compatibility
Integrates seamlessly into your workplace and adapts to your needs. Features established interfaces and international voltages.

Choose your BIOSAFE® smart. Software

Smart Config-Version
On-site freezer monitoring system.

Smart+ Info.View
Onsite and remote desktop system with safe data transfer and connection of up to 254 BIOSAFE® freezer in up to 10 different groups.

Smart+ messenger Info.Alarm
Includes all features from smart+ **with** encrypted SMS (via provider*) and eMail alarm.

*) Additional charges for provider services might be possible.

BIOSAFE® smart

Smart. Stable. Steady.

The One-Stop Biobank

Expert support

We are specialists in the field, and can help you find the most efficient solution for your facility.

55 YEARS Our Expertise

For more than 55 years we closely work with scientists and researchers.

Cryo Engineering

Turnkey biobanks: planning, engineering, and installation

Service

Helpdesk, Hotline 24/7, Maintenance schedules.

BIOSAFE® smart

The digital brain of the biobank.

4.0 State-of-the-art In-house Software

For the efficient management of the complete bio repository.

BIOSAFE® smart

Smart. Stable. Steady.

Main features

BIOSAFE® smart, On-site freezer monitoring system including:

- º Logging and monitoring of alarms and events
- º Data storage according to GMP FDA CRF 21 Part 11
- º Twofold access control via RFID transponder and PIN
- º LN2-Level Controller (indication and refilling of liquid nitrogen)
- º Temperature measurement with up to 3 temperature sensors
- º Optical and acoustical alarm signal on the panel
- º Forwarding of alarms notifications and temperature data
- º Further optional functions: Battery back-up, warm gas bypass, software with alarm and messenger
- º Ethernet interface, network-compatible

✉ 📞 💬 **your Sales Manager**

Memo

BIOSAFE® smart		
material number		qty
☐ 78221903	BIOSAFE®smart120	
☐ 78221906	BIOSAFE®smart220	
☐ 78221909	BIOSAFE®smart420	
☐ 78221912	BIOSAFE®smart500	
☐ 78221915	BIOSAFE®smart600	
☐ 78221918	BIOSAFE®smart1000	
☐ 78221921	BIOSAFE®smart1400	
☐ 78221924	BIOSAFE®smart2400	

230 V

medical device compliant to MDD 93/42 EEC		
material number		qty
☐ 78221879	BIOSAFE®smart120 MD	
☐ 78221882	BIOSAFE®smart220 MD	
☐ 78221885	BIOSAFE®smart420 MD	
☐ 78221888	BIOSAFE®smart500 MD	
☐ 78221891	BIOSAFE®smart600 MD	
☐ 78221894	BIOSAFE®smart1000 MD	
☐ 78221897	BIOSAFE®smart1400 MD	
☐ 78221600	BIOSAFE®smart2400 MD	

Additional equipment options are available.

Software options	
☐ 78216677	BIOSAFE® smart+
☐ 78216678	BIOSAFE® smart+ messenger

Local Contact

Cryotherm®
life science

55 YEARS
1964 - 2019

Excellence
in Engineering

Cryotherm GmbH & Co. KG

Euteneuen 4

57548 Kirchen/Sieg, Germany
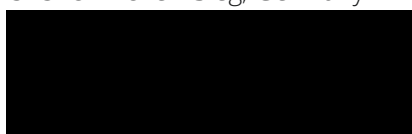
Life Science

It's in your hands.

Excellence in Biorepository

BIOBANKING
- Conceptual Design
- Engineering
- IQ / OQ
- ...

▶ p. 8

BIOSAFE® Working / Wide Neck Series
120 - 220 - 420 - 820
up to 51,200 vials, 2 ml

▶ p. 10

Multilayer vacuum isolated pipes

▶ See Brochure

BIOSAFE® Longtime / Narrow Neck Series
500 - 800 - 1800 - 2400
up to 120,000 vials, 2 ml

▶ p. 17

APOLLO® Nitrogen Storage Vessel
50 - 350 l capacity

▶ S.38

BIOSAFE® smart
The digital brain of your biobank

▶ p. 9

ALPHA / JUNO® Nitrogen Storage & Transport Vessel
6 - 30 l capacity

▶ p. 36

BIOSAFE® MARATHON
Dry shipping vessel up to 500 vials, 2 ml.

▶ p. 34

BIOSAFE® VENUS
For small to medium sample volumes up to 6,000 vials, 2 ml.

▶ p. 30

BIOSAFE® Rack-System
Standardised and individual design

▶ p. 22

BIOSAFE® iTrack
Intelligent sample management software

▶ p. 26

Cryotherm®
life science

Cryopreservation using cryogenic liquefied nitrogen is an established and reliable practice in science, research, medicine, environmental research and engineering. The safe cooling down to -190°c in the gas phase as well as the inert atmosphere allow for optimal freezing and storage of valuable medical and biological samples and materials.

Cryotherm, a leading supplier of storage, transfer and transport systems, has been a renowned manufacturer of cryogenic technology products and services for almost 60 years.

BIOSAFE® systems by Cryotherm has long been synonymous with superior quality and safety. Experience, technology and our know-how make it easy for you to decide on BIOSAFE®. Advancing into the future with recent cutting-edge developments, we have expanded our BIOSAFE® line-up with new life science products.

Our BIOSAFE®-systems consist of:

- ▶ BIOSAFE® / VENUS cryogenic storage containers, made of stainless steel or aluminum for the storage of large, but also small sample quantities.
- ▶ BIOSAFE® smart, a level controller device and container monitoring system for reliable supply of cryogenic liquefied nitrogen
- ▶ BIOSAFE® VENUS – an aluminum container series for small to medium sample volumes.
- ▶ BIOSAFE® MARATHON – a dry shipping container for safe transport of your biological samples.
- ▶ BIOSAFE® GO is the practical and ergonomic workbench for the safe loading of your biological samples into vials, boxes, racks, etc.

Body Protection

Cryo-Aprons	Beschreibung	Artikelnr.
length: approx. 920 mm, for protection from cryogenic fumes and splashes for temperature range to -160°c		77031519
length: approx. 1,380 mm, for protection from cryogenic fumes and splashes for temperature down to -160°c		77031520
Cryo-Protective Shield and Goggles		
Cryo-protective sign and inspection Glass **4**	head protection signs of vulcanized fibre foam padded dimensions: (WxH) 460 x 190 mm	77031452
Safety goggles with side protection **3**		0794189
Schild		
"Wear eye protection" **6**	Adhesive Foil Ø 20 cm Symbol	78210204
"Wear hand protection" **7**	Adhesive Foil Ø 20 cm Symbol	78210205

Cryo-Protective Equipment Full Set

Description	Item No.
Incl. Cryo-Gloves **1**, Cryo-Apron **4**, Cryo-Protective sign **5** and 2 warning Signs **6** + **7**	78400851

Cryo-Gloves, waterproof

Description Hand protection, 5 fingers, down to -160° C	Length	Size	Item No.
Length: ca. 300 mm **1**	Wrist	S	78400613
Length: ca. 300 mm	Wrist	M	78213086
Length: ca. 300 mm	Wrist	L	77031450
Length: ca. 300 mm	Wrist	XL	78400823
Length: ca. 400 mm **2**	Forearm	S	78400843
Length: ca. 400 mm	Forearm	M	78400180
Length: ca. 400 mm	Forearm	L	78400887
Length: ca. 400 mm	Forearm	XL	78400856
Length: ca. 500 mm	Elbow	M	78400899
Length: ca. 500 mm	Elbow	L	77031451
Length: ca. 500 mm	Elbow	XL	78211327

Cryotherm®
life science

The one-stop Biobank

60 YEARS

Ice cold experience
Since almost 60 years we have been working closely with scientists and researchers.

On-site consultation
Our experts are looking forward to consult with you!

Excellence in Engineering
Your Turnkey Biobank: Everything in one full package!

Service / 24/7 hotline and maintenance
Always close to our customers.

4.0 Monitoring
Clever management of your entire biobank. Even from afar.

BIOSAFE® smart
The digital brain of your biobank.

Biobanking 4.0

Big Data
From monitoring to recording to evaluation of the sample cycle - Let data speak.

100 % in control
Thanks to optional electromechanical locking, your samples are protected against access. Twofold access control via RFID transponder and PIN code. Logs all activities according to GMP FDA CRF 21 part 11.

Touch Screen
Intuitive multifunctional 8.8" panel with colored touch display. Bright and functional.

Conversion Kit*
Your existing BIOSAFE® repository freezer can be updated with new BIOSAFE® smart. Item No. 78221956

* Cryotherm verifies feasibility.

Best durable
Protected by a sturdy glass panel, ideal for aseptic and medical environments.

Extensive special equipment
Various options for linking components such as warmgas bypass, UPS battery, lid lock, additional temperature sensors and much more.

certified CE MDD 93/42 EEC according to class IIa

-190°C

Select your Software-Package

Config-Version	BIOSAFE® Info.View	BIOSAFE® Info.Alarm
On-site BIOSAFE® monitoring via color display (included).	On-site and remote monitoring of BIOSAFE® including secure data analysis and transfer, with the ability to connect up to 254 BIOSAFE® units in up to 10 cryobanks. optional: Item No. 78216677	contains all advantages of BIOSAFE® Info.View incl. messenger function via eMail. **System requirements:** Customer internet connection and email account. optional: Item No. 78216678

BIOSAFE® 120 - 220 - 420 - 820
Our secure BIOSAFE® Wide Neck Storage Vessel Series.

BIOSAFE® 120 - 220 - 420 - 820
The practical working biorepository system.

Cryotherm®
life science

All Advantages at a Glance

Storing samples for

science | research | human genetics | pharmacology | hygienics & environmental medicine | bio-chemestry | laboratory medicine | transfusion medicine | reproduction medicine (IVF) | oncology | micro- and macrobiology | pathology | virology | forencic medicine | virology | tropical medicine | veterinary genetics | plants genetics | science | research | human genetics | pharmacology | hygienics & environmental medicine | bio-chemestry | laboratory medicine | transfusion medicine | reproduction medicine (IVF) | oncology | micro- and macrobiology | pathology | virology | forencic medicine | virology | tropical medicine | veterinary genetics | plants genetics | science | research | human genetics | pharmacology | hygienics & environmental medicine | bio-chemestry | laboratory medicine | transfusion medicine | reproduction medicine (IVF) | oncology | micro- and macrobiology | pathology | virology | forencic medicine | virology | tropical medicine | veterinary genetics | plants genetics | science | research | human genetics | pharmacology | hygienics & environmental medicine | bio-chemestry | laboratory medicine | transfusion medicine | reproduction medicine (IVF) | oncology | micro- and macrobiology | pathology | virology | forencic medicine |

Our BIOSAFE® systems 120 to 820 are optimised for maximum capacity with minimised external dimensions. The large, thermodynamically optimised, vacuum-insulated lid that comes with an attractive design makes it possible to access stored materials in just seconds.

Filling of samples takes place through the wide neck opening in the freely accessible storage compartment. The solid construction, made of polished, stainless steel, ensures maximum life time and a low evaporation rate. A combined vacuum closure and safety device for the vacuum chamber provides additional security.

All Advantages at a Glance

certified CE MDD 93/42 EEC according to class IIa

Distinctive & sophisticated:
Ergonomic lifting and swivelling mechanism / Low, user-friendly vessel height.

Ahead of the market:
Our integrated BIOSAFE® smart control
for level control and vessel monitoring.

Double the safety!
Mechanically and (optional) electronically lockable lid.

TOP accessibility
to your samples, ideal for frequent usage.

Well-thought-out:
Depending on the vessel size, high nitrogen reserves below the shelf floor will last several days.

Optimised storage capacity
by utilising space-saving smart rack systems.

High storage capacity
for up to 51,200 samples, 2 ml vials.

Low evaporation rates

Smooth surfaces, that are **easy to disinfect** - even on top of the lid.

Visual Insights.
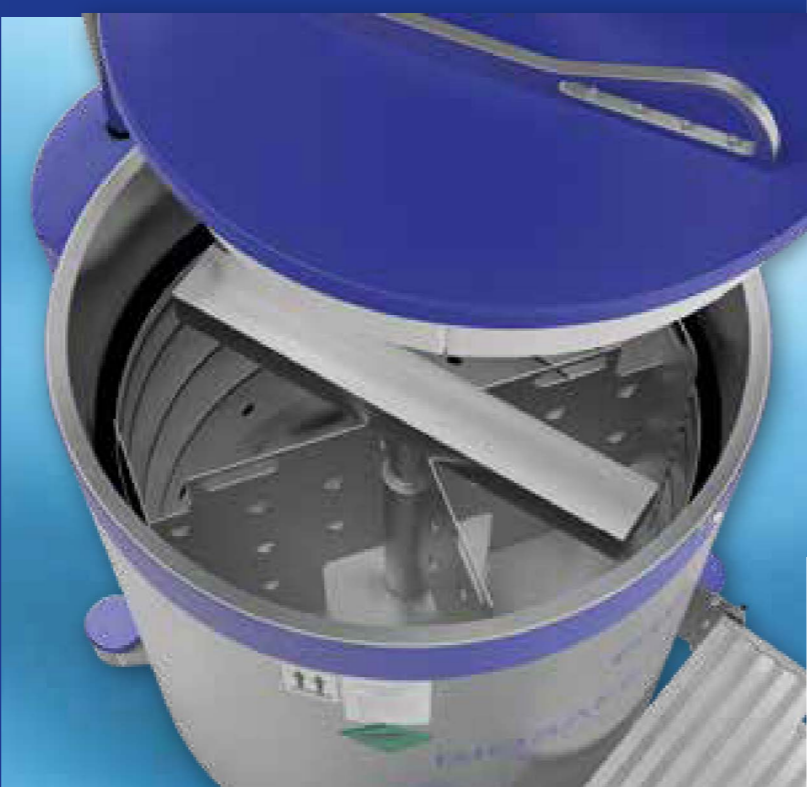
Ideal for routine work with biological-medical samples.

Cryotherm®
life science

Technical Data

NEW

Wide-neck BIOSAFE®			120	220	420	820
Neck/ inside diameter	Ⓐ	[mm]	514	664	854	1,091
LIN Capacity under platform		[l]	21	35	57	140
Weight, empty		[kg]	100	175	225	600
Diameter, outside	Ⓑ	[mm]	560	710	900	1,150
Total height	Ⓒ	[mm]	1,420*	1,680	1,680	2,222
Operating height**	Ⓓ	[mm]	1,050	1,070	1,070	970
Installation altitude for racks		[mm]	625	625	625	915
Caster diameter		[mm]	-	80	80	63
Evaporation rate		[%/day]	2.3	2.0	1.5	1,2

*) without rollerbase
**) BIOSAFE® 820 measured from step, BIOSAFE® 120 / 220 / 420 from bottom

Storage Capacities

NEW
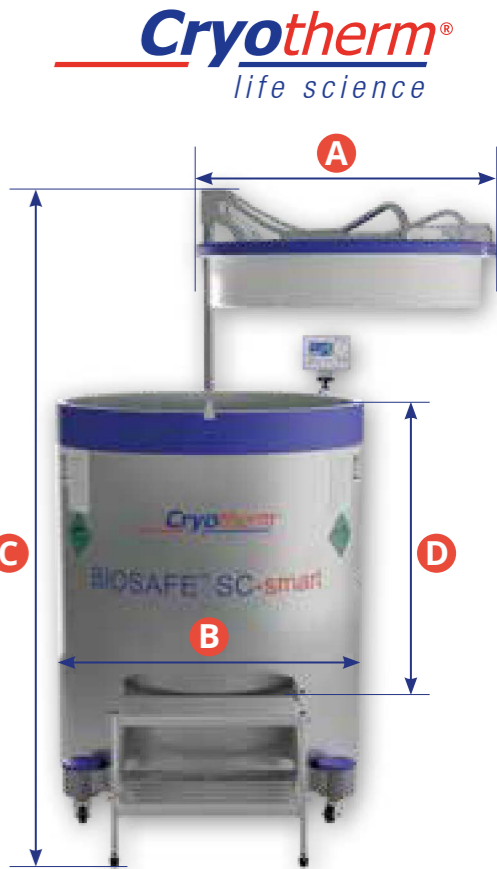
Wide-neck BIOSAFE®		120	220	420	820
Geometric content	[l]	151	251	420	888
2 ml vials	[max./up to]	7,000	13,000	23,100*	51,200

*) for 2 ml vials in Cryotherm drawer system

▷ Overview

BIOSAFE® 120 - 220 - 420 - 820

Smart rack system for vials 2 ml in cryoboxes.

Cryotherm®
life science

BIOSAFE® 420
Storage capacity: up to 22,000 vials

BIOSAFE® 120
Storage capacity: up to 7,000 vials

- **7 smart racks à 570 x 140 x 136 mm, 10 levels,**
  Item No.:   78221976 for smart rack per pc.
- suitable for cryoboxes, 10 x 10 pieces,
  Dimension: 53 x 132 x 132 mm
  Item No.:   78212859
- or cryoboxes, 9 x 9 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78214364

Smart rack
including cryobox

Smart rack
system
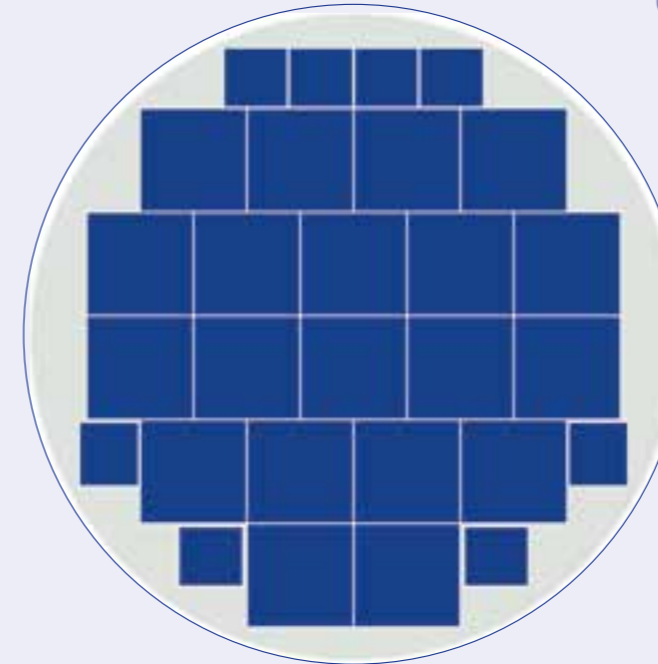
BIOSAFE® 420
Storage capacity: up to 22,000 vials

- **20 smart racks à 570 x 140 x 136 mm, 10 levels**
  Item No.:   78221976 for smart rack per pc.
- suitable for cryoboxes, 10 x 10 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78212859
- or cryoboxes, 9 x 9 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78214364
- **8 Smart-Racks à 570 x 84 x 78 mm, 10 Etagen**
  Item No.:   78222196 for smart rack per pc.
- suitable for cryoboxes, 5 x 5 pieces
  Dimension: 52 x 75 x 75 mm
  Item No.:   78202839
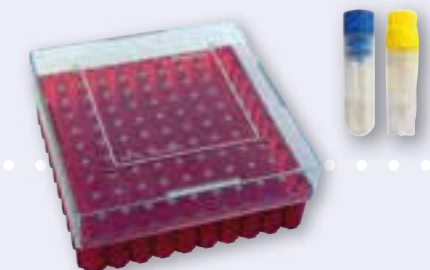
BIOSAFE® 220
Storage capacity: up to 13,000 vials

- **12 smart racks à 570 x 140 x 136 mm, 10 levels,**
  Item No.:   78221976 for smart rack per pc.
- suitable for cryoboxes, 10 x 10 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78212859
- or cryoboxes, 9 x 9 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78214364
- **4 smart racks à 570 x 84 x 78 mm, 10 levels,**
  Item No.:   78222196 for smart rack per pc.
- suitable for cryoboxes, 5 x 5 pieces
  Dimension: 52 x 75 x 75 mm
  Item No.   78212860

BIOSAFE® 820 **NEW**
Storage capacity: up to 51,200 vials

- **32 Smart-Racks à 915 x 140 x 136 mm, 16 Etagen**
  Item No.:   78221742
- suitable for cryoboxes, 10 x 10 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78212859
- or cryoboxes, 9 x 9 pieces
  Dimension: 53 x 132 x 132 mm
  Item No.:   78214364

▶ Overview
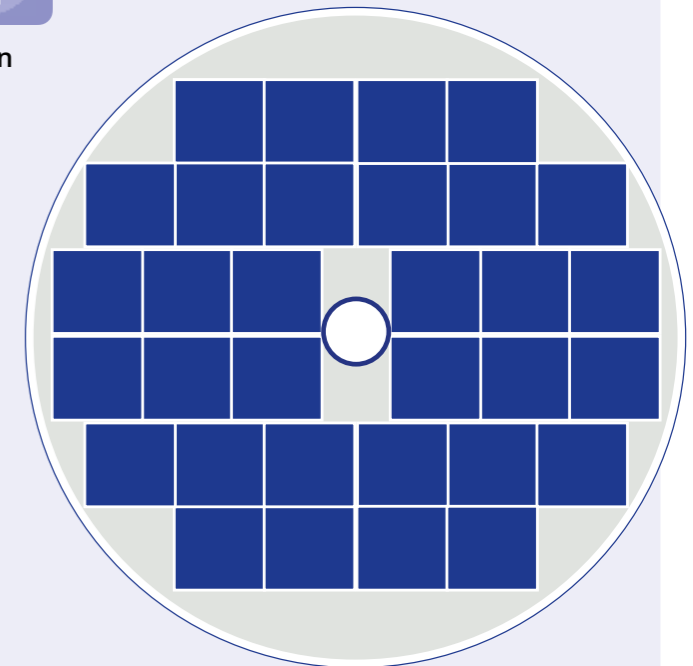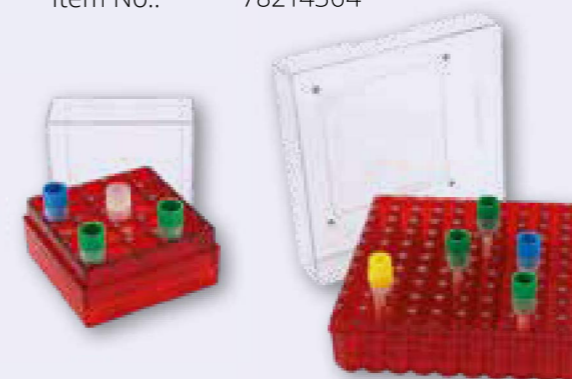
Our Narrow Neck BIOSAFE® Series.

All Advantages at a Glance

Storing samples for

science | research | human genetics | pharmacology | hygiene | dental medicine | bio-chemestry | laboratory medicine | transfusion medicine | production medicine | macrobiology | forencic medicine | veterinary genetics | science | research | pharmacology | hygiene | medicine | bio-transfusion medicine | (IVF) pathology | forencic medicine | virology | veterinary genetics | plants genetics | science | research | pharmacology | bio-transfusion | (IVF) pathology | virology | veterinary genetics | research | pharmacology | bio-transfusion | oncology | pharmacology | pathology | virology | medicine | veterinary genetics | plants genetics | science | research | human genetics | pharmacology | bio-chemestry | laboratory medicine | transfusion medicine | reproduction

picture of the BIOSAFE® 800

Cryogenic facilities with > 100 freezers
© Photo Fraunhofer IBMT, Dr. Obergrießer

Our BIOSAFE® systems 500 to 2400 are optimised for maximum capacity with minimum consumption. In the range of 500 litres to 2400 litres and more, the containers can be easily loaded via the side-mounted vessel neck and the smooth-running carousel. Smooth-running castors ensure the mobility of our BIOSAFE® storage vessels and provide even more flexibility.

© Photo:

BioKryo GmbH
Leben bewahren.

The safe bank. The long-term storage BIOSAFE® series.

All Advantages at a Glance

certified
CE MDD
93/42 EEC
according to
class IIa

Zero-gravity lid technology
A convenient spring supported lid lets you open BIOSAFE® with one hand and zero effort.

Engineered for Excellence
Made in Germany to the highest standards for medical devices (MDD 93/42 EEC), BIOSAFE® features design and materials that are optimised for aseptic environments.

Double the safety!
Mechanically and (optional) electronically lockable lid.

Ahead of the market:
Integrated BIOSAFE® smart-control
provides level control and vessel monitoring

Best in its class!
Store up to 120,000 2 ml samples in just one BIOSAFE® vessel. Unbeatable amount!

BIOSAFE® MD-smart

TOP-Handling
Smooth carousel for quick and safe usage.

Sophisticated ergonomics
Convenient steps, handles and a user-friendly low operating height ensure safe and comfortable handling.

More than just safe
Numerous options for redundant vessel monitoring for GMP-compliant applications.

Our Narrow Neck BIOSAFE® Stainless Steel Series.

Cryotherm®
life science

Technical Data

Longtime stotage BIOSAFE®		500	800	1800	2400
Neck diameter Ⓐ	[mm]	450	520	830	830
LIN Capacity under platform	[l]	50	116	287	320
Weight, empty	[kg]	320	560	1,100	1,300
Diameter, outside Ⓑ	[mm]	890	1,058	1,500	1,650
Diameter, inside / carousel	[mm]	795	966	1,346	1,500
Total height Ⓒ	[mm]	1,340	1,380	2,150	2,150
Operating height Ⓓ	[mm]	1,014	1,080	1,070	1,070
Installation altitude for racks	[mm]	800	800	915	915
Caster diameter	[mm]	80	80	100	100
Evaporation rate	[%/day]	1.2	1,0	0.7	0.6
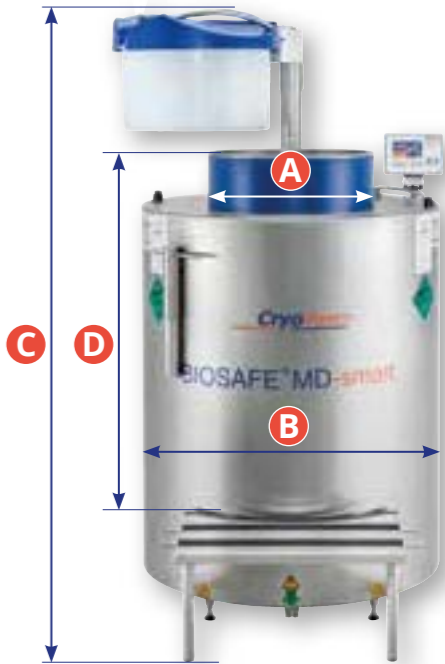
Storage Capacities

Longtime storage BIOSAFE®		500	800	1800	2400
Geometric content	[l]	490	960	1,800	2,400
2 ml vials	[max./up to]	28,280	43,120	92,800	120,000

Automation in the Cryobank

Picture of a BIOSAFE® 8800, with a capacity of 1 mil. vials 2 ml for individual cryobanking project.

BIOSAFE® 500 - 800 - 1800 - 2400

Inventory system for smart racks - vials 2 ml in cryoboxes.

Cryotherm®
life science

BIOSAFE® 500
Storage capacity: up to 28,280 vials
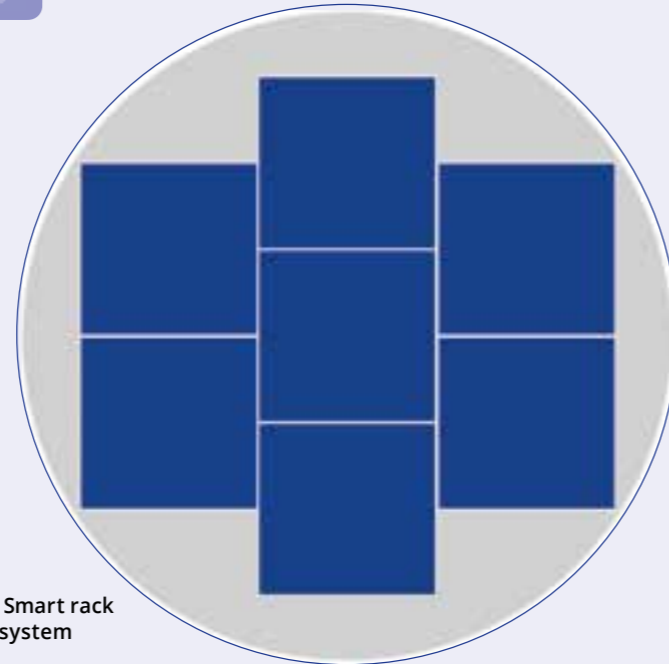
- 18 smart racks à 800 x 140 x 136 mm, 14 levels
  Item No.   78221978 for smart rack per pc.
- suitable for   cryoboxes 10 x 10 pieces
  dimensions: 53 x 132 x 132 mm
  Item No.   78212859
- or   cryoboxes 9 x 9 pieces
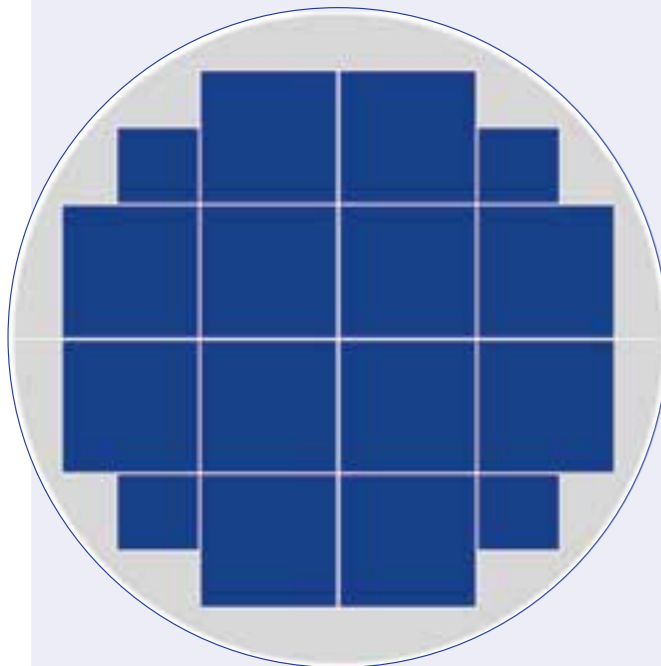 dimensions: 53 x 132 x 132 mm
  Item No.   78214364
- 2 smart racks à 800 x 84 x 78 mm, 14 levels
  Item No.   78222198 for smart rack per pc.
- suitable for   cryoboxes 5 x 5 pieces
  dimensions: 52 x 75 x 75 mm

Smart rack
including cryobox

**Smart rack
system**

BIOSAFE® 1800
Storage capacity: up to 92,800 vials

- 52 smart racks à 915 x 140 x 136 mm, 16 levels
  Item No.   78221742 for smart rack per pc.
- suitable for   cryoboxes 10 x 10 pieces
  dimensions: 53 x 132 x 132 mm
  Item No.   78212859
- or   cryoboxes 9 x 9 pieces
  dimensions: 53 x 132 x 132 mmm
  Item No.   78214364
- 24 smart racks à 915 x 84 x 78 mm, 16 levels
  Item No.   78222199 for smart rack per pc.
- suitable for   cryoboxen 5 x 5 pieces
  dimensions: 52 x 75 x 75 mmm
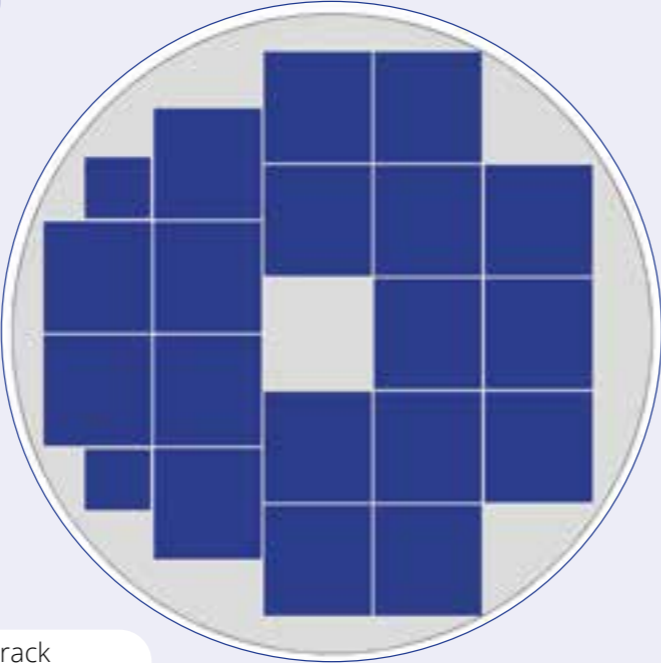
BIOSAFE® 800
Storage capacity: up to 40,600 vials

- 26 smart racks à 800 x 140 x 136 mm, 14 levels
  Item No.   78221978 for smart rack per pc.
- suitable for   cryoboxes 10 x 10 pieces
  dimensions: 53 x 132 x 132 mm
  Item No.   78212859
- or   cryoboxes 9 x 9 pieces
  dimensions: 53 x 132 x 132 mm
  Item No.   78214364
- 12 smart racks à 800 x 84 x 78 mm, 14 levels
  Item No.   78222198 for smart rack per pc.
- suitable for   cryoboxes 5 x 5 pieces
  dimensions: 52 x 75 x 75 mm
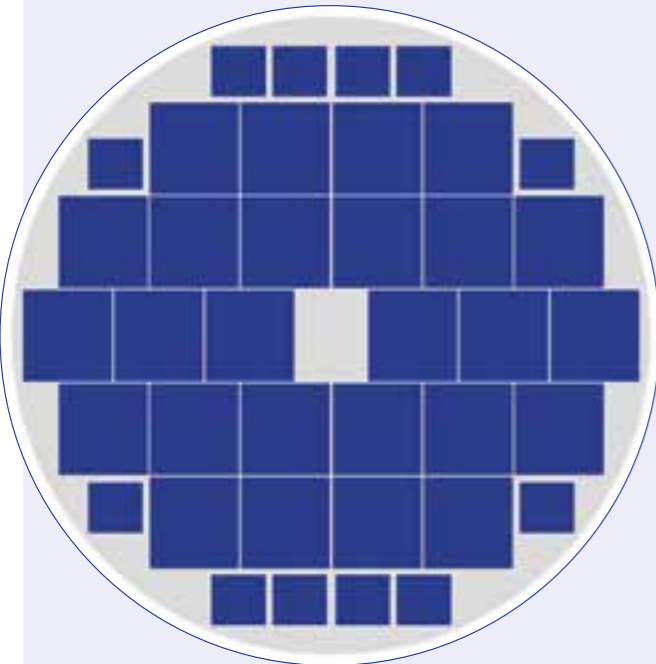
BIOSAFE® 2400
Storage capacity: up to 120,000 vials

- 68 smart racks à 915 x 140 x 136 mm, 16 levels
  Item No.   78221742 for smart rack per pc.
- suitable for   cryoboxes 10 x 10 pieces
  dimensions: 53 x 132 x 132 mmm
  Item No.   78212859
- or   cryoboxes 9 x 9 pieces
  dimensions: 53 x 132 x 132 mmm
  Item No.   78214364
- 28 smart racks à 915 x 84 x 78 mm, 16 levels
  Item No.   78222199 for smart rack per pc.
- suitable for   cryoboxen 5 x 5 pieces
  dimensions: 52 x 75 x 75 mmm
  Item No.   78212860

▶ Overview

Cryotherm®
life science

Your needed Packaging

Our various Solutions

For your BIOSAFE® Repository Freezers

GAS PHASE: liquid under the platform; samples immersed in N2 vapours (temperatures around -180°C)

LIQUID PHASE: Samples completely immersed in liquid nitrogen (temperatures around -190°C)

Possibility of both types of cryopreservation through probe length adaptation

All Advantages at a Glance
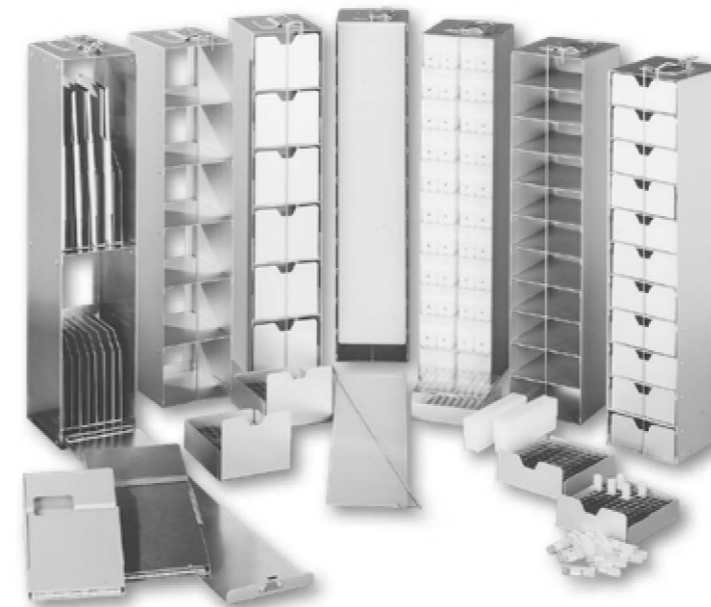
▶ High storage capacity with new High Effiency system
▶ Safety fixation system
▶ Maximum protection for your samples
▶ Variousset heights for flexible use and compatibility with all biorepository freezers
▶ Variable arrangements for setting your own order system
▶ Low tare weight due to sturdy aluminium construction
▶ Transparency by means of sample management system

New Smart racks
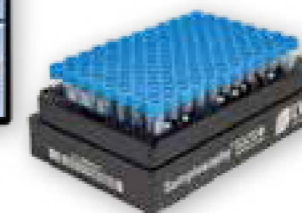
For more information
BIOSAFE® iTrack page 25

Rack of **stainless steel** with **uneven heat distribution:**
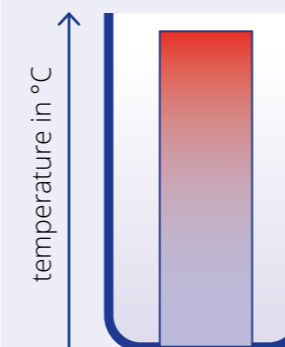
Cryotherm rack of **aluminium** with **even heat distribution:**

temperature in °C

Cryo vessels

For detailed information please regard dedicated brochure for inventory systems.

RACK-SYSTEMS

Cryotherm® life science

Functional Favorite

BIOSAFE® smart is an on-site vessel monitoring system with the following abilities:

- Level control and monitoring, automatic filling and temperature logging
- Monitoring and evaluation of alarms and events
- Data analysis and transfer according to GMP / FDA CRF 21 Part 11
- Access restriction to control functions on administration level via PIN or RFID transponder
- Visual and audible alarm on the touch-display, with existing internet connection with BIOSAFE® View Info Software also as e-mail

- Forwarding of alarms (potential-free contacts) and temperature (4-20mA signal)
- Possibility to connect a redundant level measurement for alarming purposes (optional for BIOSAFE® narrow neck lines)
- Mechanical and electrical lid locking (optional for BIOSAFE® narrow neck lines)
- Temperature monitoring with up to three temperature sensors
- Other optional equipment: Warmgas bypass, UPS backup battery

Other clear BIOSAFE® smart plus points are:

- Audit trail on control actions and settings
- Networking via TCP/IP or Modbus (option) of up to 256 devices via their own physical, static subnet and a remote desktop connection.
- Extension to comprehensive cryobank management via BIOSAFE® smart BSIO Box (option)

- Linking options with existing systems via several digital and potential-free inputs and outputs, as well as analog connections
- PLC function with five freely programmable channels for extensive adaptation to individual Adaptation to individual customer requirements thanks to BIOSAFE® View Software

Main accessories

BIOSAFE® 120 - 2400

Item No.	Short text	Pcs
78202845	Rollerbase for BIOSAFE® 120	
78202830	Transport aid for BIOSAFE® 220 - 800	
78224556	Temp. booster gas phase storage BIOSAFE® 120	
78224557	Temp. booster gas phase storage BIOSAFE® 220	
78224115	Temp. booster gas phase storage BIOSAFE® 420	
78216677	BIOSAFE®-view Info	
78216678	BIOSAFE®-view InfoAlarm	
78217372	MODBUS for BIOSAFE® smart	
78216670	Network switch 8x	
78222466	Second solenoid valve	
78222354	Warmgas bypass BIOSAFE® smart 120 - 800	
78222355	Warmgas bypass with add. Main-valve, BIOSAFE® smart 120 - 800	
78221877	Warmgas bypass BIOSAFE® smart 1800 - 2400	

Your BIOSAFE® Biorepository Freezer

certified CE MDD 93/42 EEC according to class IIa

BIOSAFE® 120 - 2400

230 V

SC-smart Item No.	MD-smart Item No.	Short text	Pcs
78221903	78221879	BIOSAFE® 120 smart	
78221906	78221882	BIOSAFE® 220 smart	
78221909	78221885	BIOSAFE® 420 smart	
78221912	78221888	BIOSAFE® 500 smart	
78223148	78223145	BIOSAFE® 800 smart	
78224877	n/a	BIOSAFE® 820 smart	
78223480	n/a	BIOSAFE® 1800 smart	
78221924	78221600	BIOSAFE® 2400 smart	

Item No.	Short text
78221956	Conversion kit for existing BIOSAFE® repository freezer
78217486	BIOSAFE®-smart I/O-Box incl. cabinet
78222361	Temperatur sensor for BIOSAFE® smart (additional)
78222353	Battery backup 24VDC for BIOSAFE® smart

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BIOSAFE® iTrack
Your intelligent Sample Management.

BIOSAFE® iTrack
Smart Sample Management.

Cryotherm®
life science

Tracking your Cryogenic Samples

Example of 2D Scanner

A 6 8

Not included in delivery.

BIOSAFE® iTrack is a central database that can manage your stored samples based on their storage position. It can easily be adapted to the individual needs of your biobank. The necessary basic information and additional user defined information is linked to each sample. This information may be different data templates, logistics information or process data.

All Advantages at a Glance

- ° User friendly storage management
- ° FDA 21 CFR Part 11 compliance
- ° Sample based temperature logging
- ° Highest degree of data encryption for your sensitive data
- ° Developed, tested and documented according to ISO 13485, ISO 62304, IEC 62366
- ° User-defined storage structures/layouts
- ° Comprehensive storage level access rights
- ° Barcode scanner and RFID support
- ° User-defined sample data templates
- ° Visualisation of storage locations and containers
- ° Single/Multiple sample check in/out
- ° Single/Multiple sample data modification
- ° Comprehensive reporting PDF
- ° Comprehensive data Exports PDF/CSV

- ° Multiple IDs possible
- ° Windows based system
- ° Multi-site/multi database support
- ° 2D Flatbed scanner support
- ° Lab OS Web Access /Customer requests
- ° Electronic signatures ("A face four eyes check" feature)

Item Numbers

With BIOSAFE® iTrack we offer you various options for software support, whether for vials, bags, straws or individual packaging for your samples,

BIOSAFE® iTrack	
Item no.	
78217135	BIOSAFE® iTrack 3 years - Software support for a term of three years, for up to 5 users, one computer installation (on one laptop or PC)
78217140	BIOSAFE® iTrack 3 years - Extra CAL license for one additional computer installation
78217142	BIOSAFE® iTrack 3 years - Extension for each additional user
78217137	BIOSAFE® iTrack 3 years - Webaccess* for the secure mobile access to sample database with search and read permission (search, request & order samples)
78217136	BIOSAFE® iTrack 5 years - Software support for a term of three years, for up to 5 users, one computer installation (on one PC, laptop)
78216916	BIOSAFE® iTrack 5 years - Extra CAL license for one additional computer installation
78216917	BIOSAFE® iTrack 5 years - Extension for each additional user
78217138	BIOSAFE® iTrack 5 years - Webaccess* for the secure mobile access to sample database with search and read permission (search, request & order samples)
78217143	BIOSAFE® iTrack Remote-Training**

*) Access depending on administrative authorization . **) Remote maintenance by telephone or remote access are limited to a maximum, monthly hourly quota of three hours within the corresponding contract period.

Ideal for safe handling of your samples.

All Advantages at a Glance

BIOSAFE® GO is the practical and ergonomic workbench for the safe further processing of your biological samples in vials, boxes, racks, etc.
Optimal for the the transport of large sample volumes from one container to another other container in a cryobank, e.g. relocation.

- ▶ Sample handling and transport of two horizontal towers in cryogenic N2 gas phase
- ▶ Vacuum insulated storage container mounted on a stainless steel transport cart
- ▶ Additional opening with plug for level measurement
- ▶ Temperature booster made of aluminum for low temperatures in the working chamber
- ▶ LN2 filling device with ball valve and 1.5 m insulated filling hose connection
- ▶ Two accesses for T-probes and mounting options for temperature logger
- ▶ Movable sample handling table
- ▶ Two separately opening lid halves

Datalogger
for temperature recordings, with GPS on request. Item No. 78224306

exemplary Illustration

Technical Data

BIOSAFE® GO		
Geometrical capacity	[l]	150
LN2 capacity	[l]	30
Total lenght x width x height	[mm]	1,450 x 620 x 970
Inner length x width x height	[mm]	1,030 x 445 x 450
Opening, access (length x witdh)	[mm]	1,030 x 445
Operating height	[mm]	920
Storage height	[mm]	275
Filling height	[mm]	110
Weight empty	[kg]	115
Weight full (N2)	[kg]	173
Evaporation rate	[%/day]	2,5
Castor diameter	[mm]	125
With 2 lids, ball valve 3/8", safety relief valve 5 bar, insulated decanting hose length 1.5m and transport stopper DN50		**Item No.** 78223611

© Photo: CREAPHARM BIOSERVICES

CREAPHARM®
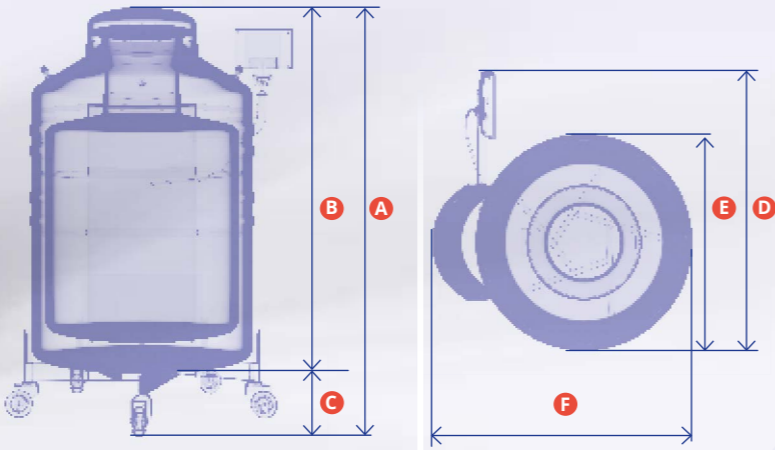BIOSERVICES

The safe Storage for your Samples.

All Advantages at a Glance

The safe aluminum storage vessel.
Ideal for biological-medical samples.
▶ For up to 6,000 samples 2 ml vials in gas or liquid phase
▶ For straws in up to 96 goblets à 65 mm
▶ For up to 108 bags 250 / 500 ml

Table for dimensions

Technical Data

BIOSAFE® VENUS			150	180
Neck diameter		[mm]	216	216
Weight, empty (as delivered, with rack system and BIOSAFE® smart electronics)		[kg]	96	105
Weight, full (in real operation with LIN, max.)		[kg]	192	245
Total height	**A**	[mm]	1,100	1,215
Height of vessel	**B**	[mm]	950	1,065
Height of roller base	**C**	[mm]	140	140
Diameter, outside	**E**	[mm]	678	678
Depth max.	**F**	[mm]	840	840
Width max.	**D**	[mm]	820	820
Daily evaporation		[%/day]*	0.79	0.54
Static holding time 💧		[days]*	148	181
Static holding time ☁		[days]*	13	13

*) The daily evaporation rate and the static holding time were determined at 20 degrees Celsius, 1013 hectopascal, with the vessel standing still, lid closed and without accessories. These are nominal values that may change depending on the use and age of the container.

Folding lid
Item No. 78217562

Insulation plug
Item No. 78217561

Smart-rack system for a comfortable and safe acces to your samples
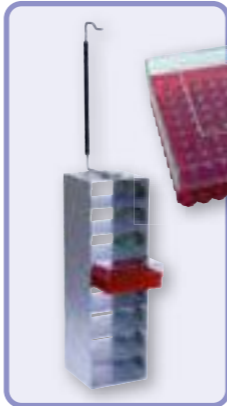
Individual numbering for clear placement

Storage Capacities

BIOSAFE® VENUS		150		180	
💧 Liquid phase / ☁ Gas phase		💧	☁	💧	☁
Nominal volume	[l]	120		175	
Racks (aluminum)	[piece]	6	6	6	6
Number of levels usable	[quantity]	8	7/8	10	9/10
2 ml cryogenic vials in 10x10 boxes	[up to]	4,800	4,200	6,000	5,400
Size of cryogenic boxes 10x10 (hxwxd)	[mm]	132 x 132 x 53		132 x 132 x 53	
Daisy goblets	[up to]	72	48	96	72
Bags 250/500 ml (77031488)	[up to]	54	-	108	54

Further vessel sizes and accessories upon request.

Dedicated inventory system & accessories for the VENUS

Cryoboxes for 2 ml vials:
für 9x9 Item No. 78214364
für 10x10 Item No. 78212859

Drawer for goblets

Smart rack for vials
VENUS 150 Item No. 78217554
VENUS 180 Item No. 78217555

Rack for goblets
VENUS 150 Item No. 78217556
VENUS 180 Item No. 78217557

Smart rack for bags
VENUS 150 Item No. 78217558
VENUS 180 Item No. 78217559

Cryo-Gloves
Length: ca. 400 mm
Item No.
Size S: 78400843
Size M: 78400180
Size L: 78400887
Size XL: 78400856

Cryo-protective sign
Item No. 77031452

Roller base
Ø 687 mm (interior), height 140 mm with five swivel castors, three of them lockable: Item No. 78217560

Multicolor goblets with lid and divider for an easy identification

☁ **Gas phase storage**
Your samples are stored in the gas phase, without contact to liquid nitrogen. The usable levels secure the storage in gas phase.

💧 **Liquid phase storage**
Your samples are stored up to 100% in the liquid phase at temperatures down to -196°c.

▶ Overview

Functional Favorite

BIOSAFE® smart is an on-site vessel monitoring system with the following abilities:

- Level control and monitoring, automatic filling and temperature logging
- Monitoring and evaluation of alarms and events
- Data analysis and transfer according to GMP / FDA CRF 21 Part 11
- Access restriction to control functions on administration level via PIN or RFID transponder
- Visual and audible alarm on the touch-display, with existing internet connection with BIOSAFE® View Info Software also as e-mail

- Forwarding of alarms (potential-free contacts) and temperature (4-20mA signal)
- Possibility to connect a redundant level measurement for alarming purposes (optional for BIOSAFE® narrow neck lines)
- Mechanical and electrical lid locking (optional for BIOSAFE® narrow neck lines)
- Temperature monitoring with up to three temperature sensors
- Other optional equipment: Warmgas bypass, UPS backup battery

Other clear BIOSAFE® smart plus points are:

- Audit trail on control actions and settings
- Networking via TCP/IP or Modbus (option) of up to 256 devices via their own physical, static subnet and a remote desktop connection.
- Extension to comprehensive cryobank management via BIOSAFE® smart BSIO Box (option)

- Linking options with existing systems via several digital and potential-free inputs and outputs, as well as analog connections
- PLC function with five freely programmable channels for extensive adaptation to individual Adaptation to individual customer requirements thanks to BIOSAFE® View Software

All from one source

BIOSAFE® VENUS

With the BIOSAFE® smart for the Venus series, an automatic refill system can be connected conveniently, easily and safely.
For the nitrogen supply, the APOLLO® series is available.

Cryotherm® *life science*

Item Numbers

**Our BIOSAFE® VENUS vessels are available in capacities from 150 to nearly 180 litres.**

For your BIOSAFE® VENUS we supply various equipment options and extensive accessories.

BIOSAFE® VENUS Vessel Options

	Item No.		Quantity
☐	78224110	BIOSAFE® VENUS 150 SC, incl. roller base and connecting hose 1.5 m to APOLLO® , for up to 6 racks, max 8 levels*	
☐	78217554	BIOSAFE® VENUS 150 smart rack for vials 2ml**, 8 levels (single item number)	
☐	78217556	BIOSAFE® VENUS 150 smart rack for goblets with drawers*** for 4 goblets per level, 3 levels (single item number)	
☐	78217558	BIOSAFE® VENUS 150 smart rack for 9 cassettes per level, 1 level (single item number)	
☐	78224111	BIOSAFE® VENUS 180 SC, incl. roller base and connecting hose 1.5 m to APOLLO® for up to 6 racks, max 10 levels*	
☐	78217555	BIOSAFE® VENUS 180 smart rack for vials 2ml**, 10 levels (single item number)	
☐	78217557	BIOSAFE® VENUS 180 smart rack for goblets with drawers*** for 4 goblets per level, 4 levels (single item number)	
☐	78217559	BIOSAFE® VENUS 180 smart rack for 9 cassettes per level, 2 levels (single item number)	

* APOLLO® and racks not included ** without cryoboxes *** without goblets

BIOSAFE® VENUS Extensive accessories

	Item No.		Quantity
☐	78217560	Roller base for BIOSAFE® VENUS 150/180 (re-order reference)	
☐	78212859	Cryobox (10x10, for 100 vials) with Cryotherm label, (single item number)	
☐	78214364	Cryobox (9x9, for 81 vials) with Cryotherm label, (single article number)	
☐	78212792	Transparent goblet, without lid, Ø 65 m (single article number)	
☐	78216990	Set of 5 transparent daisy goblets with 11 coloured inserts, lid, Ø 65 mm (set item number)	
☐	77031488	Cassette for bags (single article number)	

▶ Our extensive security equipment can be found on pages 6 and 7.
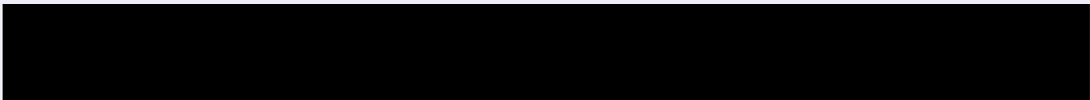
Cryotherm®
life science
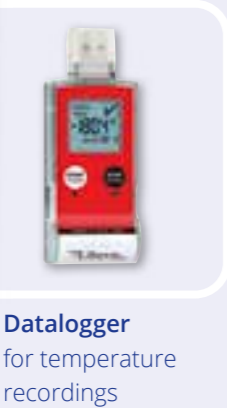
All Advantages at a Glance

The safe aluminum dry shipping container for your biological-medical samples.

▷ For up to 500 samples, 2 ml vials
▷ For up to 6 bags 500 ml
▷ Liquid nitrogen can not go out
▷ Low temperatures up to -190 C°

Datalogger for temperature recordings

certified
CE MDD 93/42 EEC
according to class IIa

Storage Capacities

BIOSAFE® MARATHON		25 MD
☁ **Dry-Shipper**		
Total volume	[l]	25.0
Number of racks	[piece]	1
Dimension of the hybrid racks (HxWxD)	[mm]	297x133x142
2 ml vials	[up to]	500
bags size 280x120x150 mm	[up to]	8

Other dry shipper sizes and accessories on request.

Hybrid rack for bags / vials for BIOSAFE® MARATHON 25 MD
Item No. 78223756

Bags require protective cassettes. Capacity deviations are possible depending on the manufacturer.

Suitable accessories for BIOSAFE® MARATHON 25 MD

1

Roller base for MARATHON 25 with five swivel castors, three of them lockable
Item No. 78224116

2

Robust, lightweight protective packaging MARATHON 25 MD
Item No. 78217502

Height: 810 mm
Wide: 520 mm
Depth: 520 mm

Protective cap
Item No. 78217562 **3**

4 Plug with convection barrier
Item No. 78223718

3 and 4 included in the initial scope of delivery

exemplary illustration

Extensive safety equipment from page 6

Technical Data

BIOSAFE® MARATHON		25 MD
☁ **Dry-Shipper**		
Amount of nitrogen absorbed	[l]	9.5
Neck diameter	[mm]	210
Height of sample space	[mm]	305
Total height, without data logger	[mm]	705
Weight, empty, without racks	[kg]	15.0
Weight, full, without racks	[kg]	22.0
Diameter, outer	[mm]	394
Static holding time ☁	[days]*	10

*) The daily evaporation rate and the static holding time were determined at 20 degrees Celsius, 1013 hectopascal, with the vessel standing still, lid closed and without accessories. These are nominal values that may change depending on the use and age of the container.

The BIOSAFE® MARATHON 25 is **lockable and sealable*.**

*) not included in the scope of delivery

Item numbers

We supply various equipment variants and a wide range of accessories for your BIOSAFE® MARATHON

BIOSAFE® MARATHON		
Item No.		Quantity
☐ 78223636	BIOSAFE® MARATHON 25 MD DRYSHIPPER	
☐ 78223756	Hybrid-Rack for BIOSAFE® MARATHON 25 MD DRYSHIPPER	
☐ 78224306	Bluetooth® pdf data logger incl. external PT100 probe	

Other container sizes on request.

BIOSAFE® MARATHON 25 Extensive accessories / spare parts		
Item No.		Quantity
☐ 78224116	Roller base **1**	
☐ 78217502	Robust, lightweight protective packaging **2**	
☐ 78217562	Protective cap **3** (spare parts)	
☐ 78223718	Plug with convection barrier **4** (spare parts)	

▷ Our extensive security equipment can be found on pages 6 and 7.
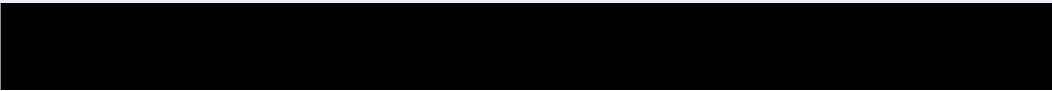
Unpressurised Vessel Series for small Amounts of nitrogen.

Supply vessel for cryogenic liquid nitrogen

Cryotherm®
life science

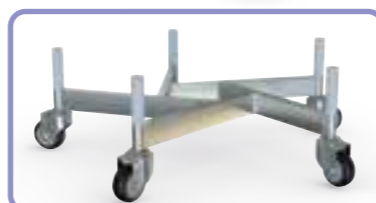### All Advantages at a Glance

Safe and lightweight storage and transport vessel made in aluminium for liquid nitrogen.

SMALL, COMPACT AND STURDY.
▶ Available in three sizes with a capacity of approx. 6, 10 & 25 litres
▶ Comprehensive accessories

All Advantages at a Glance

Supply vessel made in stainless steel for cryogenic liquid nitrogen

SIMPLE, ROBUST, EFFICIENT.
▶ Efficientexhaust gas cooling system, optimized super-insulation, compact dimensions, Pressure gauge
▶ Integrated safety device on vessel neck
▶ Combined positive pressure-relief and seal-off device

Technical Data

Storage Capacity ALPHA		5	10	25
Net capacity	[l]	6	10	25
Daily evaporation	[l/Day]*	0.12	0.12	0.12
Static holding time	[Days]*	50	83	208
Weight, empty	[kg]	5	6.2	10.5
Weight, full (filled with LIN)	[kg]	9.7	13.9	31.6
Total height	[mm]	468	528	700
Neck tube diameter	[mm]	50	50	50
Inner diameter	[mm]	231	231	296
Outer diameter	[mm]	300	300	396

*) The daily evaporation rate and the static holding time were determined at 20 degrees Celsius, 1013 hectopascal, with the vessel standing still, lid closed and without accessories. These are nominal values that may change depending on the use and age of the container.

Roller base for ALPHA 25
with five swivel castors, three of them lockable
Item No. 78217449

Technical Data

Storage Capacity JUNO®		30
Geometrial capacity	[l]	30
Operating overpressure	[bar]	1.3
Empty weight	[kg]	18
Full weight	[kg]	41
Decanting head connection		KF 50
Total height	[mm]	660
Immersion depth	[mm]	533
Outside diameter	[mm]	369
Total width	[mm]	407
Staticevaporation rate	[l/day]	0.75

! Our ALPHA lines are available from 6 to 25 litres capacity.

Item Numbers

We supply various equipment variants and a wide range of accessories for your ALPHA.

ALPHA Lines		
Item No.		Quantity
☐ 78224172	ALPHA 5, pressureless transport/storage vessel for liquid nitrogen	
☐ 78224173	ALPHA 10, pressureless transport/storage vessel for liquid nitrogen	
☐ 78224174	ALPHA 25, pressureless transport/storage vessel for liquid nitrogen	
☐ 78217449	Roller base for ALPHA 25, with five swivel castors, three of them lockable	

Other container sizes on request.

Item Numbers

We supply a wide range of accessories for your Juno® 30 .

JUNO® 30		
Item No.		Quantity
☐ 78220205	JUNO® 30, 1.3 bar with transport plug	
☐ 78220349	Roller base	
☐ 78220412	Decanting head with waste gas and overflow valve	
☐ 79229957	Decanting hose (1.5 m)	
☐ 79404217	Phase separator	

Special options on request

▶ Overview

APOLLO®
Your ideal Storage and Transport Vessel for liquid Nitrogen.

APOLLO®
Components and Flow chart.

Cryotherm® life science

All Advantages at a Glance

Best in it's class! Evaporation rate for e.g. APOLLO® 200: Only 0.6% per day!

A ball valve for comfortable view: "Open or close"

Safety measures at eye level

Ideal operating height and user-friendly fittings (ball valves)

High stability for secure and smooth transport

Time savings through increased uptime for your application

Robust protective frame for safe transport

Higher service life with the following advantages: Savings in transport and handling costs

High quality design made of corrosion-resistant stainless steel

Low maintenance

Large, stable and smooth-running wheels (Ø 125-160 mm) without sharp edges

Great mobility through compact design

Long-term vacuum protection through high-quality adsorption and getter materials

Including Accessories

Gloves
exemplary illustration
Item No.: 07794111

Safety glasses with side protection
Item No.: 07794189

Transfer hose 1,5 m
Item No.: 79229957

Phase separator G 3/8" complete
Item No.: 79404217

(everything included)

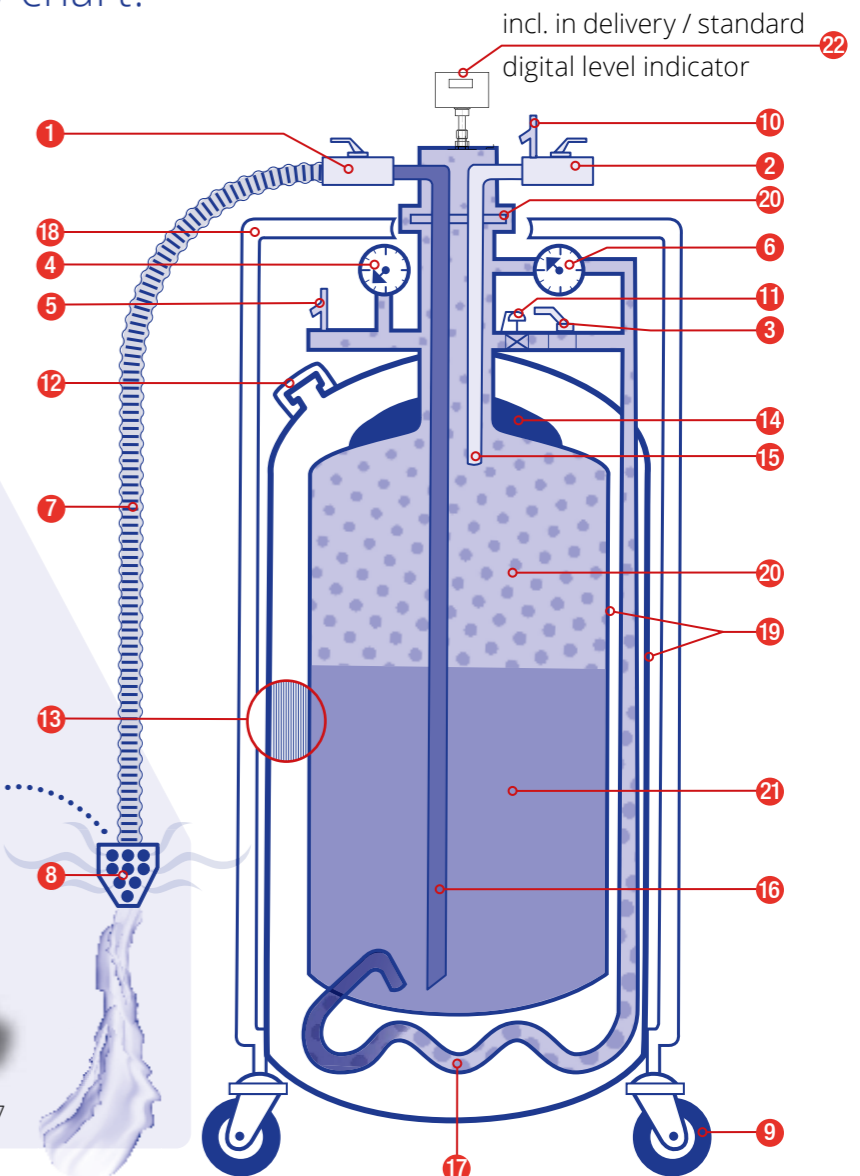incl. in delivery / standard
digital level indicator

Applications

APOLLO®

compatible

▶ Analysers
▶ Cryogenic mills
▶ Cryogenic saunas
▶ Freezers
▶ Biobanks
▶ BIOSAFE®
…

Essential Construction Elements and Equipment

1. Extraction valve
2. Exhaust and overflow valve
3. Pressure build-up valve
4. Pressure gauges
5. Safety valve
6. Analog level indicator (opt.)
7. Filling hose
8. Phase separator
9. Castors
10. Pressure regulator (opt.)
11. Pressure build-up regulator (opt.)
12. Vacuum sealing and safety valve
13. Superinsolation
14. Absorbents (long-term vacuum protection) and special getters
15. Exhaust and overflow line
16. Sampling line
17. Pressure build-up line
18. Chassis and protective frame
19. Indoor and outdoor vessel
20. Gaseous nitrogen
21. Liquid nitrogen

▶ Overview

APOLLO®
Economical. Easy-to-use. Secure.

APOLLO®
Extensive Accessories.
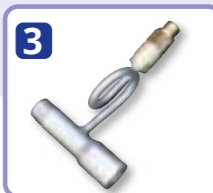
Cryotherm®
life science

Standard equipment

- With digital level indicator (APOLLO® 100 - 350) Integrated
- safety device on the vessel neck
- Vacuum seal and safety device
- Smooth-running castors and transport protection frame
- Level and pressure gauge
- EK lift with exhaust and overflow valve
- Integrated pressure build-up
- Filling hose (1.5 m) with phase separator
- Cold protection gloves **1** and safety glasses **2** with side protection

1

exemplary illustration

2

3

for a fixed connection of an APOLLO® urgently required!

! Our APOLLO®-Series is available with a capacity of 50 to 350 litres

For dimensions see table.

Exhaust | Filling removal
UNF 3/4"

G
A **B** **E** **C**
D **F**

Technical Data

Vessel made Stainless steel		APOLLO® 50 1.3 bar	APOLLO® 100 1.3 bar	APOLLO® 150 1.3 bar	APOLLO® 200 2.0 bar	APOLLO® 350 2.0 bar
Approval mark		CE	CE	CE	CE0035	CE0035
Geometrical capacity	[l]	49.4	98.8	149.15	199.5	348.7
Operating overpressure max.	[bar]	1.3	1.3	1.3	2.0	2.0
Weight, empty	[kg]	44	62	79	100	160
Weight, full LIN	[kg]	85	145	204	266	450
Stat. evaporation rate LIN	[%/Day]	2	1.2	1	0,6	0.5
Total height incl. digital level ind. **A**	[mm]	905	1,240	1,580	1,350	1,785
Total height until siphon **B**	[mm]	765	1,100	1,440	1,170	1,650
Diameter, outer **C**	[mm]	500	500	500	700	700
Total width **D**	[mm]	650	650	650	800	800
Depth of immersion **E**	[mm]	585	920	1,220	910	1,350
Castor diameter **F**	[mm]	125	125	125	160	160
Neck diameter **G**	[mm]	50	50	50	50	50
Siphon connection		KF 50	KF 50	KF 50	KF 50	KF 50

Upon request the APOLLO® series is also available for other types of gas.

Options

- Pressure build-up regulator (Item No. 78202710)
- Pressure reduction regulator (Item No. 78203080)
- Double extraction liquid side (Item No. 79415416)
- Double extraction gas side (Item No. 78203081)
- Triple extraction liquid side (Item No. 79418082)
- Triple extraction gas side (Item No. 78203082)
- Safety spacer **3** (Item No. 78206124)
- Level indicator, capacitive, battery
- Forklift pockets **6**
- Set of castors, antimagnetic
- Reversion APOLLO® 50/100/150 to 4 bar

Further options available upon request.

5

The **digital display** – the capacitive level indicator for your APOLLO®

- Display and probe in one device
- Easy to use
- High precision

6

Practical **forklift pockets** facilitate the handling of your APOLLO®

▶ Our APOLLO® series complies with the European Pressure Equipment Directive 2014/68 / EU

▶ Reversion APOLLO® 50/100/150 to 4 bar, incl. pressure reduction regulator Item No. 78224071 (exemplary illustration)

Standard with digital display APOLLO® 100-350

5

Item Numbers

APOLLO® liquid nitrogen vessel	also available as 4 bar version				
	50*	100*	150*	200	350
with digital level indicator **5**	78202700	78223344	78223345	78223346	78223347
Options for APOLLO® line					
Forklift pockets **6**	78203083	78203083	78203083	78203975	78203900
Set of castors, antimagnetic	78200474	78200474	78200474	78203992	78203992

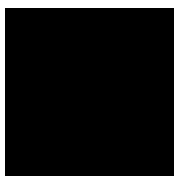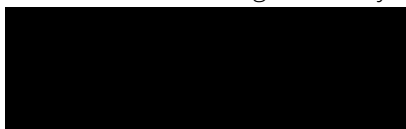*) Reversion APOLLO® 50/100/150 to 4 bar, incl. pressure reduction regulator. Item No. 78224071
**) With analog level indicator. Item No. 78202700

Overview

Cryotherm®
life science

60 *YEARS*
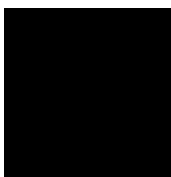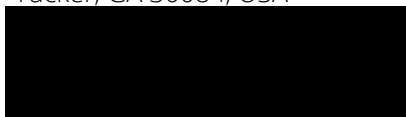1964 - 2024

Excellence
in Engineering

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Illustrations may differ. Subject to technical changes.
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