

CRYOGENIC EQUIPMENTS

Preserve the living



OVERVIEW



GT



ARPEGE

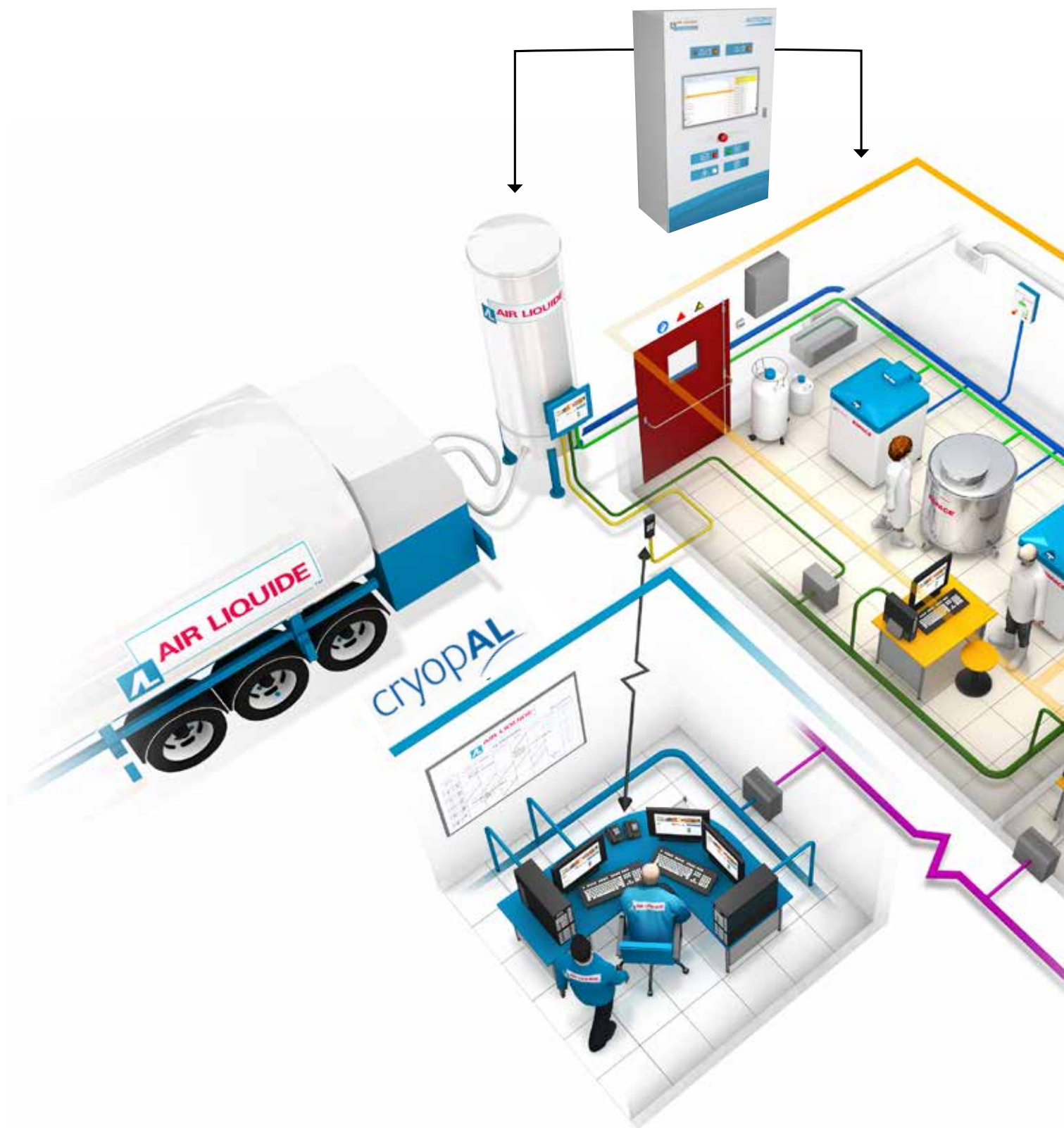


ESPACE



RCB

CRYO EQUIPMENT





VOYAGEUR



AGIL



TR



TP



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Our expertise at your service

Cryopal, an Air Liquide company based in Bussy Saint-Georges near Paris (France), designs, develops, manufactures and markets a full line of cryogenic containers dedicated to storage and transfert of liquid nitrogen and to cryopreservation and transport of biological samples.

To support their customers, Cryopal also provides a full range of services including users trainings, cryogenic room design, rental and maintenance of cryogenic equipments.



CRYOGENIC EQUIPMENTS

Preserve biological samples

- > GT cryopreservation vessels (series 2 to 40)
- > ARPEGE cryopreservation vessels (series 40 to 170)
- > ESPACE cryopreservation vessels (series 151 to 661)
- > RCB cryopreservation vessels (series 500 to 2000)



Cryopreservation vessels

GT Range - long holding time (series 2 to 35)

Small-size cryopreservation vessels for biological samples storage in straws and cryo-vials

Class IIa Medical Device – Code GMDN 16534

CRYO EQUIPMENT



- Narrow neck to optimize holding time
- Lightweight and resistant thanks to their aluminium design
- Capacity up to 2,400 straws or 180 cryo-vials
- Manual level indication
- Stainless steel or plastic canisters
- Anti-flotation system for straws thanks to plastic canisters
- 6-year vacuum warranty

The GTs long holding time (except GT 2) are **lockable** (lock not included)



Different colours for easy identification for GT 3, 9, 11, 21 and 35



Easy identification of canisters with numbering and a colour code for all the GTs long holding time



Protective cover (anti-flotation system) delivered as a standard with all the GTs long holding time equipped with plastic canisters (except GT 2)



Cryopreservation vessels

GT Range - large capacity (series 14 to 40)



- Wide neck to optimize storage capacity
- Lightweight and resistant thanks to their aluminium design
- Capacity up to 16,400 straws or 1,200 cryo-vials
- Level and temperature indicator as an option on GT40
- Stainless steel canisters
- 6-year vacuum warranty



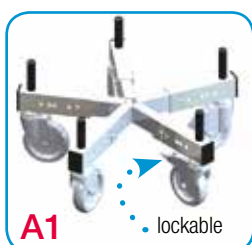
The GTs large capacity are **lockable**
(lock not included)



Canister dispatcher
on upper strap of GTs
large capacity

Accessories

- A1** : Roller base
A2 : Fixation kit for roller base (option)
B1 : Standard goblet (Ø 35-65 mm)
B2 : "Daisy" goblet with lid (Ø 65 mm)
C : Vial holder rod
D : Stainless steel lifter for 2-stage canisters (Ø 35 mm)
E1 : Stopper for stainless steel canister
E2 : Stopper for plastic canister
F : Level indicator



A1



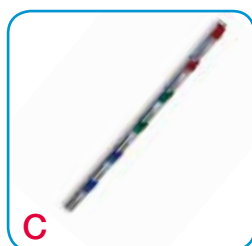
A2



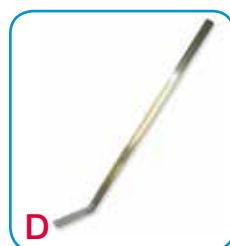
B1



B2



C



D



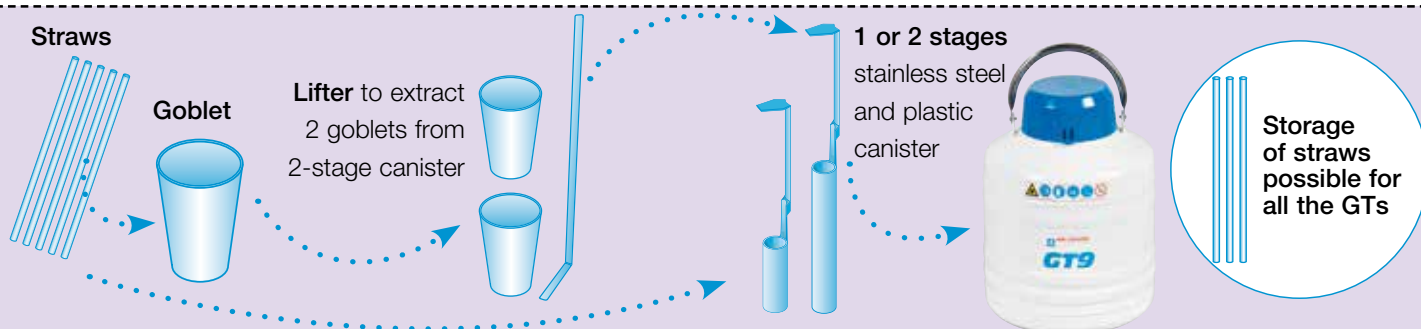
E1

E2

F

Cryopreservation vessels

GT Range - long holding time (series 2 to 35)



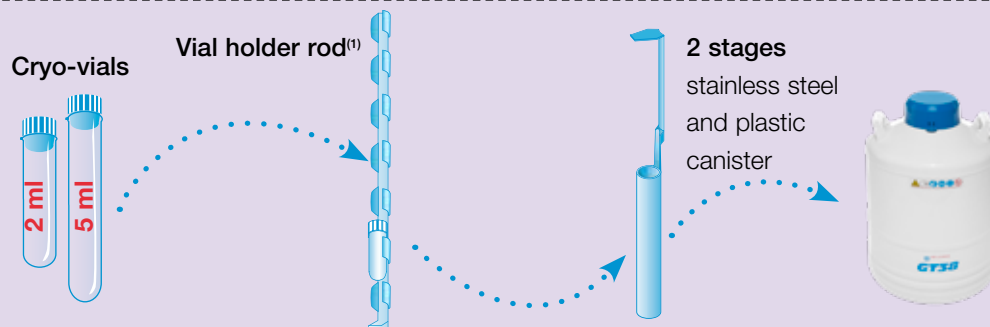
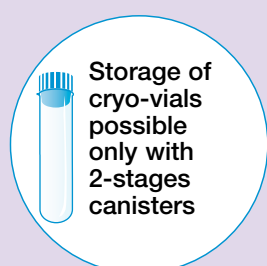
GT Range - long holding time, Ø neck ≤ 50 mm		GT 2	GT 3	GT 9	GT 11	GT 21	GT 35
FEATURES							
Usable capacity	l	2.14	3.73	9.51	12.4	21.6	33.8
Empty weight	kg	1.9	4.5	8.2	9	13	15
Full weight	kg	3.5	7.5	15.7	19	30.4	43
Neck diameter	mm	30	50	50	50	50	50
Exterior diameter	mm	174	248	358	308	388	468
Total height	mm	392	405	450	630	660	660
Static holding time	d ⁽¹⁾	26	33	73	124	216	307
Daily theoretical evaporation rate	l/d ⁽¹⁾	0.08	0.13	0.13	0.10	0.10	0.11
STORAGE CAPACITY & TYPE OF CANISTERS							
Number of plastic canisters		3	6	6	6	6	6
Number of stainless steel canisters		–	6	6	6	6	6
Diameter of canisters	mm	26	38	38	38	38	38
Number of stage(s)		1	1	1	1 or 2	1 or 2	1 or 2
Height of canisters	mm	120	120	120	120 or 280	120 or 280	120 or 280
Capacity straws 0.25 ml		330	1,200	1,200	1,200 ⁽²⁾ / 2,400 ⁽³⁾	1,200 ⁽²⁾ / 2,400 ⁽³⁾	1,200 ⁽²⁾ / 2,400 ⁽³⁾
Capacity straws 0.5 ml		150	564	564	564 ⁽²⁾ / 1,128 ⁽³⁾	564 ⁽²⁾ / 1,128 ⁽³⁾	564 ⁽²⁾ / 1,128 ⁽³⁾
Capacity straws CBST TM (0.3 and 0.5 ml)		100	450	450	450 ⁽²⁾ / 900 ⁽³⁾	450 ⁽²⁾ / 900 ⁽³⁾	450 ⁽²⁾ / 900 ⁽³⁾
Capacity cryo-vials 2 ml (on vial holder rod in 2-stages canisters)		–	–	–	180	180	180
Capacity cryo-vials 5 ml (on vial holder rod in 2-stages canisters)		–	–	–	60	60	60
CRYOMEMO: level and temperature indication		–	–	–	–	–	–
PRODUCT REFERENCES							
GT fitted with							
1-stage plastic canister		GT2-1	GT3-1	GT9-1	GT11-1	GT21-1	GT35-1
1-stage stainless steel canister		–	GT3-2	GT9-2	GT11-2	GT21-2	GT35-2
2-stages stainless steel canister		–	–	–	GT11-3	GT21-3	GT35-3
2-stages plastic canister		–	–	–	GT11-4	GT21-4	GT35-4
REFERENCES FOR PRIMARY ACCESSORIES							
A1: Lockable roller base (height: 220 mm)		–	–	–	–	ACC-ALU-29	ACC-ALU-29
A2: Fixation kit for roller base (option)		–	–	–	–	ACC-ALU-32	ACC-ALU-32
B1: Standard goblet Ø 35 mm (batch of 20)		–	ACC-BOXTUBE-300	ACC-BOXTUBE-300	ACC-BOXTUBE-300	ACC-BOXTUBE-300	ACC-BOXTUBE-300
B1: Standard goblet Ø 65 mm (batch of 20)		–	–	–	–	–	–
B2: "Daisy" goblet Ø 65 mm with lid (batch of 5)		–	–	–	–	–	–
B3: Goblet with holes Ø 65 mm with lid (batch of 10)		–	–	–	–	–	–
2ml round bottom vials with white lid (batch of 100)		–	–	–	ACC-BOXTUBE-11	ACC-BOXTUBE-11	ACC-BOXTUBE-11
5ml round bottom vials with white lid (batch of 100)		–	–	–	ACC-BOXTUBE-16	ACC-BOXTUBE-16	ACC-BOXTUBE-16
C: Vial holder rod for 6 vials (2ml) or 3 vials (5ml) (batch of 10)		–	–	–	ACC-BOXTUBE-411	ACC-BOXTUBE-411	ACC-BOXTUBE-411
D: Lifter for 2-stages canister		–	–	–	ACC-BOXTUBE-405	ACC-BOXTUBE-405	ACC-BOXTUBE-405
E1: Stopper for stainless steel canister version		–	ACC-GT-2	ACC-GT-2	ACC-GT-1	ACC-GT-1	ACC-GT-1
E2: Stopper for plastic canister version		ACC-ALU-18	ACC-GT-4	ACC-GT-4	ACC-GT-5	ACC-GT-5	ACC-GT-5
F: Level indicator		ACC-GT-103	ACC-GT-103	ACC-GT-103	ACC-GT-103	ACC-GT-103	ACC-GT-103
Batch of 1-stage plastic canisters		ACC-PLASCAN-6	ACC-PLASCAN-115	ACC-PLASCAN-111	ACC-PLASCAN-112	ACC-PLASCAN-112	ACC-PLASCAN-112
Batch of 6 2-stages plastic canisters		–	–	–	ACC-PLASCAN-113	ACC-PLASCAN-113	ACC-PLASCAN-113
Batch of 6 1-stage stainless steel canisters		–	ACC-STEELCAN-101	ACC-STEELCAN-104	ACC-STEELCAN-103	ACC-STEELCAN-103	ACC-STEELCAN-103
Batch of 6 2-stages stainless steel canisters		–	–	–	ACC-STEELCAN-102	ACC-STEELCAN-102	ACC-STEELCAN-102

(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

(2) 1-stage canister: quantity of straws stored in bulk in goblet.
(3) 2-stages canister: quantity of straws stored in bulk in goblet.

Cryopreservation vessels

GT Range - large capacity (series 14 to 40)



GT Range - large capacity, Ø neck ≥ 80 mm		GT 14	GT 26	GT 38	GT 40	GT40 CRYOMEMO
FEATURES						
Usable capacity	l	13.7	27.2	37.3	43.4	43.4
Empty weight	kg	9,5	14,8	19	24	33
Full weight	kg	20,4	36	49	57	66
Neck diameter	mm	80	80	80	120	120
Exterior diameter	mm	358	468	468	468	468
Total height	mm	455	460	715	710	970
Static holding time	d ⁽²⁾	57	80	233	144	144
Daily theoretical evaporation rate	l/d ⁽²⁾	0.24	0.34	0.16	0.3	0.29
STORAGE CAPACITY & TYPE OF CANISTERS						
Number of plastic canisters		–	–	–	–	–
Number of stainless steel canisters		6	9	6	10	10
Diameter of canisters	mm	67	67	67	73	73
Number of stage(s)		1	1	2	2	2
Height of canisters	mm	120	110	280	280	280
Capacity straws 0.25 ml in standard/daisy goblets		4,920 / 3,240	7,380 / 4,860	9,840 / 6,480	16,400 / 10,800	16,400 / 10,800
Capacity straws 0.5 ml in standard/daisy goblets		2,190 / 1,440	3,285 / 2,160	4,380 / 2,880	7,300 / 4,800	7,300 / 4,800
Capacity straws CBS™ (0.3 and 0.5 ml) in standard/daisy goblets		1,350 / 1,008	2,025 / 1,512	2,700 / 2,016	4,500 / 3,360	4,500 / 3,360
Capacity cryo-vials 2 ml (on vial holder rod in 2-stages canisters)		–	–	612	1,200	1,200
Capacity cryo-vials 5 ml (on vial holder rod in 2-stages canisters)		–	–	306	600	600
CRYOMEMO: level and temperature indication		–	–	–	–	✓
PRODUCT REFERENCES						
GT fitted with						
1-stage plastic canister		–	–	–	–	–
1-stage stainless steel canister		GT14-1	GT26-1	–	–	–
2-stages stainless steel canister		–	–	GT38-1	GT40-1	NATAL40N-1
2-stages plastic canister		–	–	–	–	–
REFERENCES FOR PRIMARY ACCESSORIES						
A1: Lockable roller base (height: 220 mm)		–	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29
A2: Fixation kit for roller base (option)		–	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32
B1: Standard goblet Ø 35 mm (batch of 20)		–	–	–	–	–
B1: Standard goblet Ø 65 mm (batch of 20)		ACC-BOXTUBE-301	ACC-BOXTUBE-301	ACC-BOXTUBE-301	ACC-BOXTUBE-301	ACC-BOXTUBE-301
B2: "Daisy" goblet Ø 65 mm with lid (batch of 5)		ACC-BOXTUBE-302	ACC-BOXTUBE-302	ACC-BOXTUBE-302	ACC-BOXTUBE-302	ACC-BOXTUBE-302
B3: Goblet with holes Ø 65 mm with lid (batch of 10)		ACC-BOXTUBE-415	ACC-BOXTUBE-415	ACC-BOXTUBE-415	ACC-BOXTUBE-415	ACC-BOXTUBE-415
2ml round bottom vials with white lid (batch of 100)		–	–	ACC-BOXTUBE-11	ACC-BOXTUBE-11	ACC-BOXTUBE-11
5ml round bottom vials with white lid (batch of 100)		–	–	ACC-BOXTUBE-16	ACC-BOXTUBE-16	ACC-BOXTUBE-16
C: Vial holder rod for 6 vials (2ml) or 3 vials (5ml) (batch of 10)		–	–	ACC-BOXTUBE-411	ACC-BOXTUBE-411	ACC-BOXTUBE-411
D: Lifter for 2-stages canister		–	–	ACC-BOXTUBE-405	ACC-BOXTUBE-405	ACC-BOXTUBE-405
E1: Stopper for stainless steel canister version		ACC-GT-6	ACC-GT-8	ACC-GT-9	ACC-GT-3	ACC-GT-3
E2: Stopper for plastic canister version		–	–	–	–	–
F: Level indicator		ACC-GT-103	ACC-GT-103	ACC-GT-103	ACC-GT-103	ACC-GT-103
Stainless steel canister (per unit)		ACC-STEELCAN-1	ACC-STEELCAN-4	ACC-STEELCAN-6	ACC-STEELCAN-3	ACC-STEELCAN-3

(1) A vial holder rod can contain up to 6 cryo-vials 2 ml, or 3 cryo-vials 5 ml.

(2) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models.

Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper.

These values are nominal and can vary according to history of the container and manufacturing ranges.

Cryopreservation vessels

ARPEGE Range (series 40 to 170)

Mid-sized cryopreservation vessels to store biological samples in straws, cryo-vials and bags

Class IIa Medical Device – Code GMDN 16534

CRYO EQUIPMENT



ARPEGE models with a narrow neck for an optimal holding time



- Lightweight and resistant thanks to their aluminium design
- Capacity up to 68,880 straws or 6,000 cryo-vials
- Adapted for both liquid and gas phase storage
- Storage system by racks or canisters
- CRYOMEMO electronic device as an option on all ARPEGE range
- 6-year vacuum warranty

ARPEGE models with a wide neck for an easier access to samples



- A variety of internal storage adapted to your samples is available
- **CRYOMEMO** electronic device in option:
 - level indicator
 - temperature indicator
 - automatic filling
 - remplissage automatique

Cryopreservation vessels

ARPEGE Range - Technical features

GAS PHASE

Samples are stored **in the vapours of nitrogen** :
no contact between samples and liquid nitrogen.



LIQUID PHASE

Samples are stored and immersed according to level **in liquid nitrogen.**

Individual box locking system

Enables users to only select the box of their choice for safer use.



ARPEGE Range		40	70	110	140	170	55	75
LIQUID OR GAZ PHASE								
FEATURES		Narrow neck					Wide neck	
Usable capacity - liquid version	l	43.4	73.5	117	146	174	54.3	72.4
Usable capacity - gas version	l	-	14.2	14.3	21.9	20.5	-	-
Empty weight without inventory	kg	25	33	40	40	56	31	37
Full weight without inventory - liquid version	kg	57	91	134	156	195	75	95
Full weight without inventory - gas version	kg	-	59	69	84	90	-	-
Height without CRYOMEMO	mm	735	738	962	911	1,028	850	1,015
Height with CRYOMEMO	mm	970	921	1,145	1,094	1,211	1,035	1,200
Width	mm	468	586	586	683	683	468	468
Depth	mm	551	673	672.5	769.5	769.5	546	546
Diameter	mm	467	586	586	683	683	468	468
Neck diameter	mm	120	215	215	215	215	378	378
Static holding time ⁽¹⁾ liquid version	d	144	105	156	194	217	23	30
Static holding time ⁽¹⁾ gas version	d	-	20	19	29	25	-	-
Daily theoretical evaporation rate ⁽¹⁾	l/d	0.3	0.7	0.75	0.75	0.8	2.29	2.38
Display of level ⁽²⁾	%	✓	✓	✓	✓	✓	✓	✓
Display of temperature ⁽²⁾	°C/°F	✓	✓	✓	✓	✓	✓	✓

LN2 Connector (with automatic filling, ARPEGE 40 excluded)

Threading: 3/4 -16 UNF 2A-RH


(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1.013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

(2) CRYOMEMO as an option, available on the whole range

Cryopreservation vessels

ARPEGE Range - Containers and options

I select **the size of my container** according to **my storage requirement**

ARPEGE Range			40	70	110	140	170	55	75
LIQUID OR GAZ PHASE									
 Straws	Standard goblets (in canisters) ⁽¹⁾	0.25 ml	-	- / -	- / -	- / -	- / -	51,660	68,880
		0.5 ml	-	- / -	- / -	- / -	- / -	22,995	30,660
		CBS 0.3-0.5 ml	-	- / -	- / -	- / -	- / -	14,175	18,900
	Daisy goblets (in canisters) ⁽²⁾	0.25 ml	-	- / -	- / -	- / -	- / -	34,020	45,360
		0.5 ml	-	- / -	- / -	- / -	- / -	15,120	20,160
		CBS 0.3-0.5 ml	-	- / -	- / -	- / -	- / -	10,584	14,112
	Visotubes Ø12 mm (in racks) ⁽³⁾	0.25 ml	-	14,960 / 7,480	22,440 / 14,960	33,660 / 22,440	44,880 / 33,660	-	-
		0.5 ml	-	5,440 / 2,720	8,160 / 5,440	12,240 / 8,160	16,320 / 12,240	-	-
		CBS 0.3-0.5 ml	-	4,760 / 2,380	7,140 / 4,760	10,710 / 7,140	14,280 / 10,710	-	-
 Cryo-vials	Cryo-boxes (in racks)	2 ml ⁽⁴⁾	750 ⁽⁵⁾	2,000 / 1,600	3,600 / 3,200	4,800 / 4,200	6,000 / 5,400	3,618 ⁽⁶⁾	4,824 ⁽⁶⁾
		5 ml ⁽⁷⁾	-	972 / 648	1,620 / 1,296	1,944 / 1,458	2,430 / 1,944	-	-
	In canisters and vial holder rod ⁽⁸⁾	2 ml	-	- / -	- / -	- / -	- / -	2,142	4,284
		5 ml	-	- / -	- / -	- / -	- / -	1,071	2,142
 Bags ⁽⁹⁾	25 ml	With casing ⁽¹⁰⁾	-	132 / 88	220 / 176	330 / 264	396 / 330	-	315 ⁽¹¹⁾ - 294 ⁽¹²⁾
	700 ml	DF700 without casing	-	- / -	- / -	- / -	- / -	24	48

Note : for a use with complete and continuous immersion of samples in liquid phase, contact us to select the proper size of container according to your storage requirement.

(1) canister capacity + standard goblets Ø 65 mm

(2) canister capacity + daisy goblets Ø 65 mm

(3) rack capacity + visotubes Ø 12 mm (85 visotubes per stage)

(4) cryo-boxes capacity for 100 vials

(5) cryo-boxes capacity for 25 vials

(6) "pie" type rack capacity without electronic device.

With electronic device, loss of one rack.

(7) cryo-boxes capacity for 81 vials

(8) canister capacity + vial holder rod



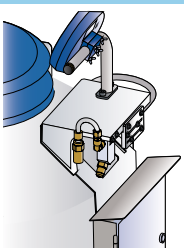
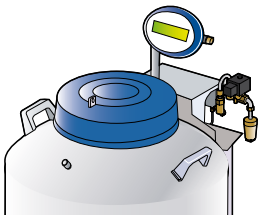
(9) possibility to store 200-/500-/700-ml bags inside ARPEGE 75

(10) Thermogenesis, Biosafe and PALL bags

(11) Thermogenesis and Biosafe bags

(12) PALL bags

Several **options** available for my **container**

SIMPLE	INITIAL	ESSENTIAL	ESSENTIAL+
			
Container without electronic device	SIMPLE + CRYOMEMO electronic	INITIAL + Automatic filling option	ESSENTIAL + Degassing option
	<ul style="list-style-type: none"> level indicator temperature indicator server option outputs 4-20 mA and RS485 for reports 	Automatic filling kit	Degassing kit

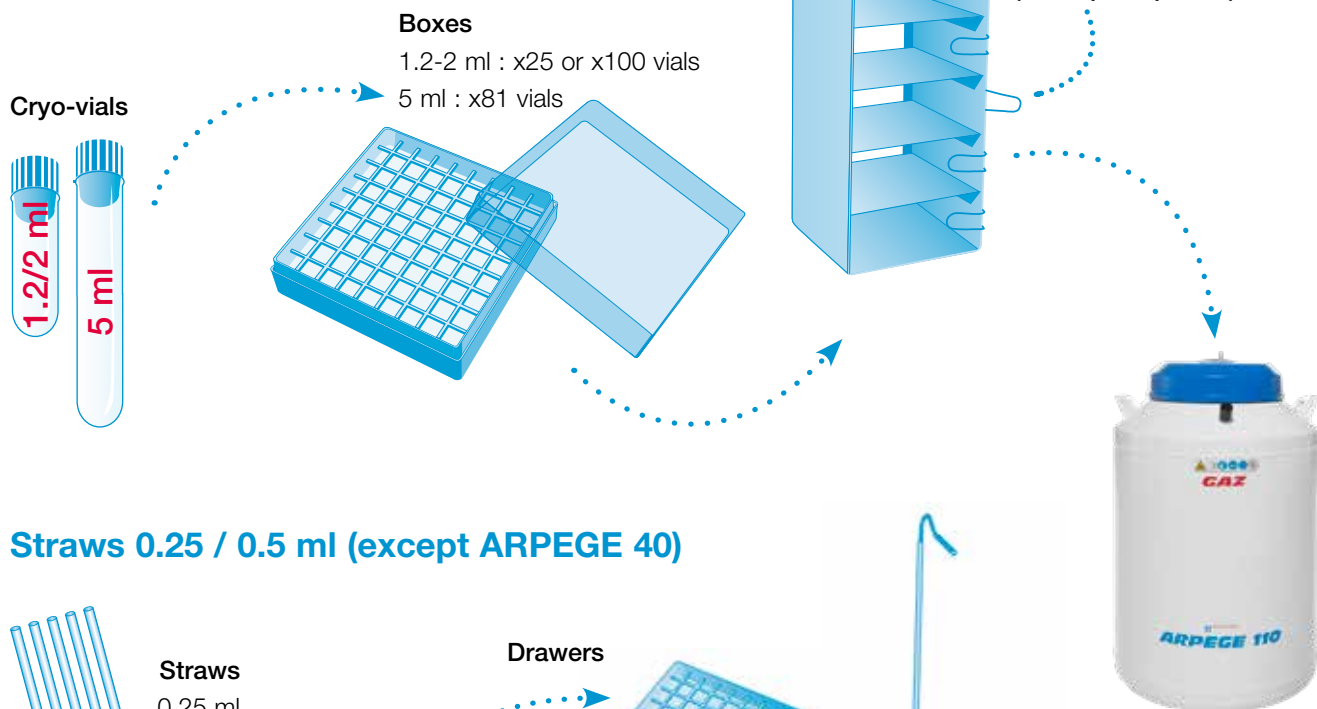
Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

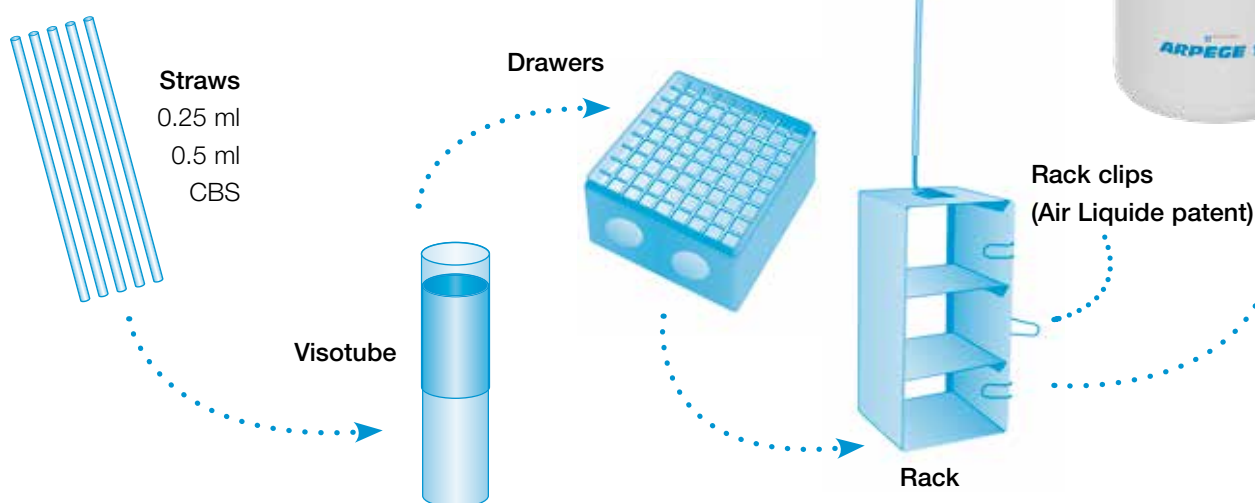
ARPEGE Range - Inventories for straws and cryo-vials

Inventories for ARPEGE 40-70-110-140-170

Cryo-vials 1.2 / 2 / 5 ml



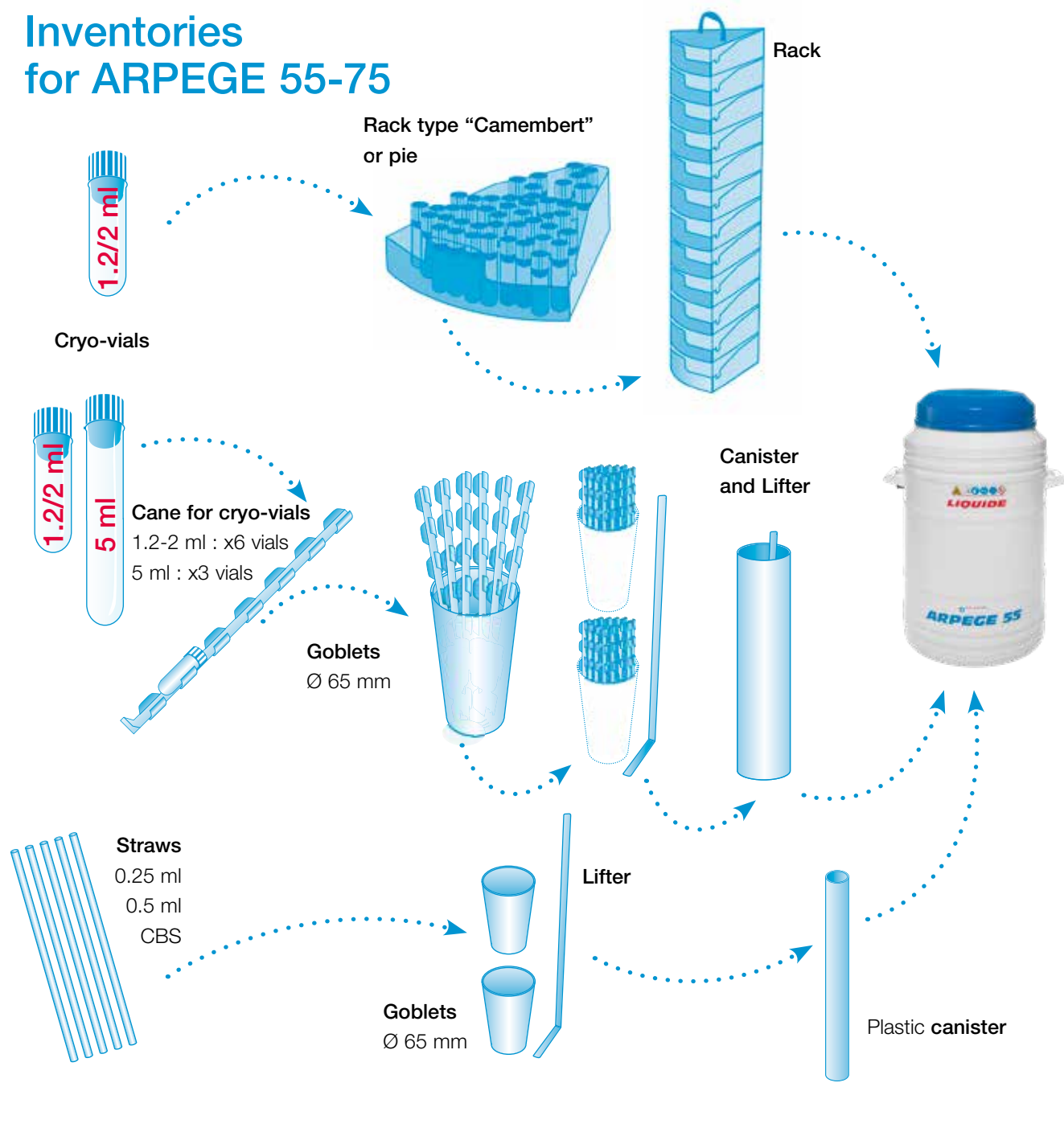
Straws 0.25 / 0.5 ml (except ARPEGE 40)



Cryopreservation vessels

ARPEGE Range - Inventories for straws and cryo-vials

Inventories for ARPEGE 55-75





Cryopreservation vessels

ARPEGE 40 Model

ARPEGE 40





I select **the type of container and my options**




	ESSENTIAL +			
	ESSENTIAL			
	SIMPLE	INITIAL	ESSENTIAL	
	Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid 	ARPEGE40N-L-1	ARPEGE40N-L-101	-	-
Gas 	-*	-*	-*	-*

* ARPEGE 40 does not exist in gas phase

I add **my inventories**

	Storage type	Description	Reference
Liquid 	Straws	-	-
	Cryo-vials 1.2-2 ml	1 Rack 5 Stages for 1.2/2 ml vials (max 6 racks per container)	ACC-RACK-16
		BATCH of 6 Racks	ACC-RACK-100
	Cryo-vials 5 ml	-	-
	Bags 25 ml	-	-
Gas 	Straws	-	-
	Cryo-vials 2 ml	-	-
	Cryo-vials 5 ml	-	-
	Bags 25 ml	-	-

I supplement with **accessories**

Storage type	Description	Reference
Straws 	-	-
Cryo-vials 1.2-2 ml 	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 8 boxes 76 x 76 x 51 mm (capacity: 25 vials)	ACC-BOXTUBE-105
Cryo-vials 5 ml 	-	-
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-29
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15



Cryopreservation vessels

ARPEGE 70 Model

ARPEGE 70



I select **the type of container** and **my options**

		ESSENTIAL +			
		ESSENTIAL			
		INITIAL			
		SIMPLE			
		Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid		ARPEGE70N-L-1	ARPEGE70N-L-101	ARPEGE70N-L-102	ARPEGE70N-L-103
Gas		-	-	ARPEGE70N-G-102	ARPEGE70N-G-103

I add **my inventories**

	Storage type	Description	Reference
Liquid	Straws	1 Rack 2 Stages for straws without visotube (max 4 racks per container)	ACC-RACK-23
		BATCH of 4 Racks	ACC-RACK-111
	Cryo-vials 1.2-2 ml	1 Rack 5 Stages for 1,2/2 ml vials (max 4 racks per container)	ACC-RACK-17
		BATCH of 4 Racks	ACC-RACK-101
	Cryo-vials 5 ml	1 Rack 3 Stages for 5 ml vials (max 4 racks per container)	ACC-RACK-12
		BATCH of 4 Racks	ACC-RACK-105
	Bags 25 ml	1 Rack 3 Stages (capacity 33 bags, max 4 racks per container)	ACC-RACK-208
		BATCH of 4 Racks	ACC-RACK-207
Gas	Straws	1 Rack 2 Stages for straws without visotube (max 4 racks per container)	ACC-RACK-23
		BATCH of 4 Racks	ACC-RACK-111
	Cryo-vials 2 ml	1 Rack 4 Stages for 1,2/2 ml vials (max 4 racks per container)	ACC-RACK-310
		BATCH of 4 Racks	ACC-RACK-300
	Cryo-vials 5 ml	1 Rack 2 Stages for 5 ml vials (max 4 racks per container)	ACC-RACK-308
		BATCH of 4 Racks	ACC-RACK-304
	Bags 25 ml	1 Rack 2 Stages (capacity 22 bags, max 4 racks per container)	ACC-RACK-210
		BATCH of 4 Racks	ACC-RACK-209

I supplement **with accessories**

Storage type	Description	Reference
Straws	BATCH of 100 visotubes with lid Ø 12 mm	ACC-BOXTUBE-5
Cryo-vials 1.2-2 ml	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 boxes 133 x 133 x 51 mm (capacity 100 vials)	ACC-BOXTUBE-104
Cryo-vials 5 ml	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 4 boxes 133 x 133 x 95 mm (capacity 81 vials)	ACC-BOXTUBE-107
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-30
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15

Cryopreservation vessels

ARPEGE 110 Model

ARPEGE 110



I select **the type of container and my options**

	ESSENTIAL +			
	ESSENTIAL			ESSENTIAL +
	SIMPLE	INITIAL	INITIAL	
	Container without electronic	SIMPLE + CRYOMEMO	+ Automatic Filling	+ Degassing Kit
Liquid	ARPEGE110N-L-1	ARPEGE110N-L-101	ARPEGE110N-L-102	ARPEGE110N-L-103
Gas	-	-	ARPEGE110N-G-102	ARPEGE110N-G-103

I add **my inventories**

	Storage type	Description	Reference
Liquid	Straws	1 Rack 3 Stages for straws without visotube (max 4 racks per container)	ACC-RACK-14
		BATCH of 4 Racks	ACC-RACK-112
	Cryo-vials 2 ml	1 Rack 9 Stages for 1,2/2 ml vials (max 4 racks per container)	ACC-RACK-18
		BATCH of 4 Racks	ACC-RACK-102
	Cryo-vials 5 ml	1 Rack 5 Stages for 5 ml vials (max 4 racks per container)	ACC-RACK-13
		BATCH of 4 Racks	ACC-RACK-106
	Bags 25 ml	1 Rack 5 Stages (capacity 55 bags, max 4 racks per container)	ACC-RACK-212
		BATCH of 4 Racks	ACC-RACK-211
Gas	Straws	1 Rack 3 Stages for straws without visotube (max 4 racks per container)	ACC-RACK-14
		BATCH of 4 Racks	ACC-RACK-112
	Cryo-vials 2 ml	1 Rack 8 Stages for 1,2/2 ml vials (max 4 racks per container)	ACC-RACK-311
		BATCH of 4 Racks	ACC-RACK-301
	Cryo-vials 5 ml	1 Rack 4 Stages for 5 ml vials (max 4 racks per container)	ACC-RACK-309
		BATCH of 4 Racks	ACC-RACK-305
	Bags 25 ml	1 Rack 4 Stages (capacity 44 bags, max 4 racks per container)	ACC-RACK-214
		BATCH of 4 Racks	ACC-RACK-213

I supplement **with accessories**

Storage type	Description	Reference
Straws	BATCH of 100 visotubes with lid Ø 12 mm	ACC-BOXTUBE-5
Cryo-vials 1.2-2 ml	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 boxes 133 x 133 x 51 mm (capacity 100 vials)	ACC-BOXTUBE-104
Cryo-vials 5 ml	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 4 boxes 133 x 133 x 95 mm (capacity 81 vials)	ACC-BOXTUBE-107
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-30
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15

Racks, canisters and CRYOMEMO electronic system are class I medical devices.



Cryopreservation vessels

ARPEGE 140 Model

ARPEGE 140



I select **the type of container and my options**

		ESSENTIAL +			
		ESSENTIAL			
		INITIAL			
		SIMPLE			
		Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid		ARPEGE140N-L-1	ARPEGE140N-L-101	ARPEGE140N-L-102	ARPEGE140N-L-103
Gas		-	-	ARPEGE140N-G-102	ARPEGE140N-G-103

I add **my inventories**

	Storage type	Description	Reference
Liquid	Straws	1 Rack 3 Stages for straws without visotube (max 6 racks per container)	ACC-RACK-24
		BATCH of 6 Racks	ACC-RACK-113
	Cryo-vials 2 ml	1 Rack 8 Stages for 1.2/2 ml vials (max 6 racks per container)	ACC-RACK-19
		BATCH of 6 Racks	ACC-RACK-103
	Cryo-vials 5 ml	1 Rack 4 Stages for 5 ml vials (max 6 racks per container)	ACC-RACK-20
		BATCH of 6 Racks	ACC-RACK-107
	Bags 25 ml	1 Rack 5 Stages (capacity 55 bags, max 6 racks per container)	ACC-RACK-216
		BATCH of 6 Racks	ACC-RACK-215
Gas	Straws	1 Rack 3 Stages for straws without visotube (max 6 racks per container)	ACC-RACK-24
		BATCH of 6 Racks	ACC-RACK-113
	Cryo-vials 2 ml	1 Rack 7 Stages for 1.2/2 ml vials (max 6 racks per container)	ACC-RACK-312
		BATCH of 6 Racks	ACC-RACK-302
	Cryo-vials 5 ml	1 Rack 3 Stages for 5 ml vials (max 6 racks per container)	ACC-RACK-313
		BATCH of 6 Racks	ACC-RACK-306
	Bags 25 ml	1 Rack 4 Stages (capacity 44 bags, max 6 racks per container)	ACC-RACK-218
		BATCH of 6 Racks	ACC-RACK-217

I supplement **with accessories**

Storage type	Description	Reference
Straws	BATCH of 100 visotubes with lid Ø 12 mm	ACC-BOXTUBE-5
Cryo-vials 1,2-2 ml	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 boxes 133 x 133 x 51 mm (capacity 100 vials)	ACC-BOXTUBE-104
Cryo-vials 5 ml	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 4 boxes 133 x 133 x 95 mm (capacity 81 vials)	ACC-BOXTUBE-107
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-30
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15

Racks, canisters and CRYOMEMO electronic system are class I medical devices.



Cryopreservation vessels

ARPEGE 170 Model











ARPEGE 170






I select **the type of container and my options**

	ESSENTIAL +			
	ESSENTIAL			
	SIMPLE	INITIAL	ESSENTIAL	
	Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid 	ARPEGE170N-L-1	ARPEGE170N-L-101	ARPEGE170N-L-102	ARPEGE170N-L-103
Gas 	-	-	ARPEGE170N-G-102	ARPEGE170N-G-103

I add **my inventories**

	Storage type	Description	Reference
Liquid 	Straws 	1 Rack 4 Stages for straws without visotube (max 6 racks per container)	ACC-RACK-25
		BATCH of 6 Racks	ACC-RACK-114
	Cryo-vials 2 ml 	1 Rack 10 Stages for 1.2/2 ml vials (max 6 racks per container)	ACC-RACK-21
		BATCH of 6 Racks	ACC-RACK-104
	Cryo-vials 5 ml 	1 Rack 5 Stages for 5 ml vials (max 6 racks per container)	ACC-RACK-22
		BATCH of 6 Racks	ACC-RACK-108
	Bags 25 ml 	1 Rack 6 Stages (capacity 66 bags, max 6 racks per container)	ACC-RACK-220
		BATCH of 6 Racks	ACC-RACK-219
Gas 	Straws 	1 Rack 4 Stages for straws without visotube (max 6 racks per container)	ACC-RACK-25
		BATCH of 6 Racks	ACC-RACK-114
	Cryo-vials 2 ml 	1 Rack 9 Stages for 1.2/2 ml vials (max 6 racks per container)	ACC-RACK-314
		BATCH of 6 Racks	ACC-RACK-303
	Cryo-vials 5 ml 	1 Rack 4 Stages for 5 ml vials (max 6 racks per container)	ACC-RACK-315
		BATCH of 6 Racks	ACC-RACK-307
	Bags 25 ml 	1 Rack 5 Stages (capacity 55 bags, max 6 racks per container)	ACC-RACK-222
		BATCH of 6 Racks	ACC-RACK-221

I supplement **with accessories**

Storage type	Description	Reference
Straws 	BATCH of 100 visotubes with lid Ø 12 mm	ACC-BOXTUBE-5
Cryo-vials 1,2-2 ml 	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 boxes 133 x 133 x 51 mm (capacity 100 vials)	ACC-BOXTUBE-104
Cryo-vials 5 ml 	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 4 boxes 133 x 133 x 95 mm (capacity 81 vials)	ACC-BOXTUBE-107
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-30
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15

Racks, canisters and CRYOMEMO electronic system are class I medical devices.



Cryopreservation vessels

ARPEGE 55 Model

ARPEGE 55








I select **the type of container and my options**





	ESSENTIAL +			
	ESSENTIAL			ESSENTIAL +
	SIMPLE	INITIAL	ESSENTIAL	
	Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid 	ARPEGE55N-L-1	ARPEGE55N-L-101	ARPEGE55N-L-102	ARPEGE55N-L-103
Gas 	-*	-*	-*	-*

* ARPEGE 55 does not exist in gas phase

I add **my inventories**

	Storage type	Description	Reference
Liquid 	Straws 	BATCH of 21 canisters + 63 goblets for straws	ACC-PLASCAN-109
	Cryo-vials 2 ml 	BATCH of 6 Racks 9 Stages for 1.2/2 ml vials	ACC-RACK-109
	Cryo-vials 5 ml 	BATCH of 21 canisters + 21 goblets for 1.2/2 & 5 ml vials	ACC-PLASCAN-108
	Bags 700 ml 	1 Rack 1 Stage for DF700 bag (capacity 6 bags, max 4 racks per container)	ACC-RACK-11

I supplement **with accessories**

Storage type	Description	Reference
Straws 	BATCH of 20 standard goblets Ø 65 mm	ACC-BOXTUBE-301
	BATCH of 5 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-302
	BATCH of 10 goblets with holes Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
	1 plastic Canister 3 Stages	ACC-PLASCAN-2
Cryo-vials 1,2-2 ml 	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 metallic vial holder rods for 6 vials (2ml)	ACC-BOXTUBE-411
	BATCH of 10 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
Cryo-vials 5 ml 	1 plastic Canister 2 Stages	ACC-PLASCAN-1
	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 10 metallic vial holder rods for 3 vials (5ml)	ACC-BOXTUBE-411
	BATCH of 10 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
Bags 700 ml 	1 plastic Canister 2 Stages	ACC-PLASCAN-1
	BATCH of 300 cardboard cases 15 x 155 x 281 mm	ACC-BOXTUBE-253
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-29
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15



Cryopreservation vessels

ARPEGE 75 Model

ARPEGE 75




Je choisis **le type de récipient** et **mes options**





	ESSENTIAL +			
	ESSENTIAL			
	SIMPLE	INITIAL	INITIAL	
	Container without electronic	SIMPLE + CRYOMEMO	INITIAL + Automatic Filling	ESSENTIAL + Degassing Kit
Liquid 	ARPEGE75N-L-1	ARPEGE75N-L-101	ARPEGE75N-L-102	ARPEGE75N-L-103
Gas 	-*	-*	-*	-*

* ARPEGE 75 does not exist in gas phase

I add **my inventories**

	Storage type	Description	Reference
Liquid 	Straws	BATCH of 21 canisters + 84 goblets for straws	ACC-PLASCAN-107
	Cryo-vials 2 ml	BATCH of 6 Racks 12 Stages for 1,2/2 ml vials	ACC-RACK-110
	Cryo-vials 5 ml	BATCH of 21 canisters + 42 goblets for 1.2/2 & 5 ml vials	ACC-PLASCAN-110
	Cryo-vials 5 ml	BATCH of 21 canisters + 42 goblets for 1.2/2 & 5 ml vials	ACC-PLASCAN-110
	Bags 700 ml	1 Rack 2 Stage for DF700 bag (capacity 12 bags, max 4 racks per container)	ACC-RACK-32

I supplement **with accessories**

Storage type	Description	Reference
Straws 	BATCH of 20 standard goblets Ø 65 mm	ACC-BOXTUBE-301
	BATCH of 5 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-302
	BATCH of 10 goblets with holes Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
	1 plastic Canister 4 Stages	ACC-PLASCAN-4
Cryo-vials 1,2-2 ml 	BATCH of 100 2ml round bottom vials with white lid	ACC-BOXTUBE-11
	BATCH of 10 metallic vial holder rods for 6 vials (2ml)	ACC-BOXTUBE-411
	BATCH of 10 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
	1 plastic Canister 2 Stages	ACC-PLASCAN-1
Cryo-vials 5 ml 	BATCH of 100 5ml round bottom vials with white lid	ACC-BOXTUBE-16
	BATCH of 10 metallic vial holder rods for 3 vials (5ml)	ACC-BOXTUBE-411
	BATCH of 10 "daisy" goblets Ø 65 mm with lid	ACC-BOXTUBE-415
	Lifter for 2-stages canister	ACC-BOXTUBE-405
	1 plastic Canister 2 Stages	ACC-PLASCAN-1
Bags 700 ml 	BATCH of 300 cardboard cases 15 x 155 x 281 mm	ACC-BOXTUBE-253
Other accessories	Lockable roller base (height: 220 mm)	ACC-ALU-29
	Fixation kit for roller base (option)	ACC-ALU-32
	Hose DN10 180/180 for nitrogen LG = 1.5 m	ACC-FL180180NL-15

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

ESPACE Range (series 151 to 661)

Large cryopreservation vessels with wide neck to store biological samples in straws, cryo-vials and bags

Class IIa Medical Device – Code GMDN 16534

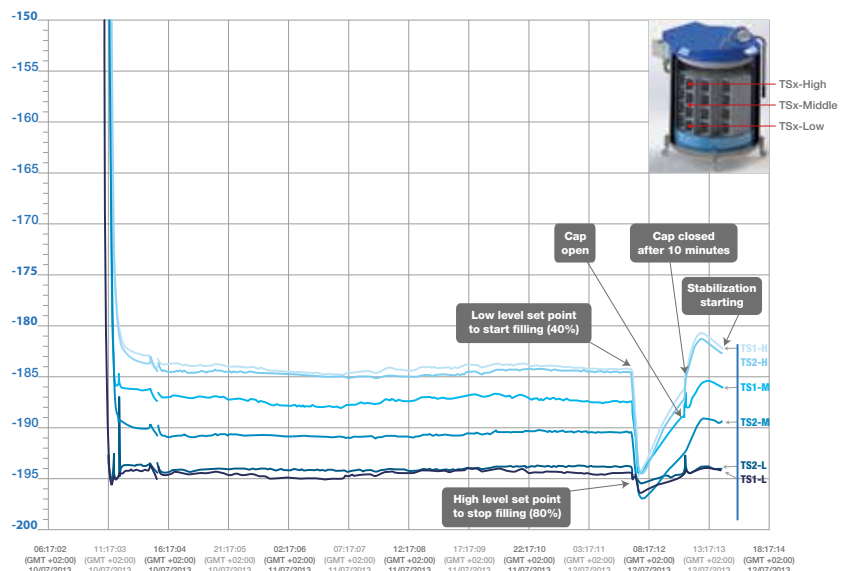


User-oriented:

- Defogging system to clear the gas vapors after opening for an easier sample removal
- The rotating tray allows an easy access to all racks (optional on the SPACE 331, serial on the SPACE 661).

- Optimal thermal performances thanks to their stainless steel design
- Wide neck for an easier access and manipulation of samples
- Adapted for both liquid and gas phase storage
- High flexibility of inventories to mix straws, cryo-vials and bags
- Capacity up to 668,300 straws, 38,400 cryo-vials or 3,465 bags
- CRYOMEMO electronic device on all models
- 6-year vacuum warranty

- SPACE range benefits from **Extreme** technology which reduces the temperature gradient from bottom to neck of the container
- Examples of temperature mappings are available on demand



Cryopreservation vessels

ESPACE Range - Technical features

GAS PHASE

Samples are stored in the vapours of nitrogen : no contact between samples and liquid nitrogen.



with casing

without casing



LIQUID PHASE

Samples are stored and immersed according to level in liquid nitrogen.

with casing

without casing

ESPACE Range			151 without RT*		331 with RT*		331 without RT*		661 with RT*
LIQUID OR GAS PHASE									
FEATURES			with casing	with casing	without casing	with casing	without casing	without casing	
Usable capacity - liquid version	l		204	394	394	394	394	755	
Usable capacity - gas version	l		35	74	74	74	74	174	
Empty weight without inventory	kg		165	245	205	230	190	275	
Full weight without inventory - liquid version	kg		326	546	505	545	505	890	
Full weight without inventory - gas version	kg		192	286	245	285	245	435	
Static holding time ⁽¹⁾ liquid version	d		42	47	47	47	47	73	
Static holding time ⁽¹⁾ gas version	d		7	8	8	8	8	16	
Daily theoretical evaporation rate ⁽¹⁾	l/d		4,8	8,3	8,3	8,3	8,3	10,3	
Neck diameter	mm		538	740	740	777	777	1,003	
Height for access	mm		1,205	1,172	1,172	1,172	1,172	1,355	
External height	mm		1,465	1,432	1,432	1,432	1,432	1,615	
Width	mm		650	932	886	932	886	1,150	
External depth	mm		940	1,100	1,100	1,100	1,100	1,375	




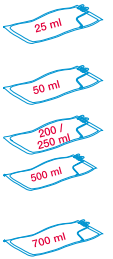
* RT = Rotating Tray

(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

Cryopreservation vessels

ESPACE Range - Containers and options


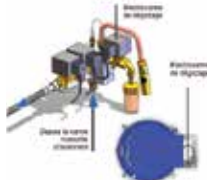
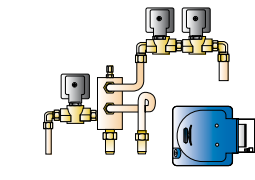
I select **the size of my container** according to **my storage requirement**

	Phase		Sample capacity	151 without PT*	331 without PT*	331 with PT*	661 with PT*
Straws		Standard goblets Ø 65 mm (in canisters)	0.25 ml	188,600	397,700	360,800	668,300
			0.5 ml	83,950	177,025	160,600	297,475
			CBS 0.3 - 0.5 ml	51,750	109,125	99,000	183,375
		Daisy goblets Ø 65 mm (in canisters)	0.25 ml	124,200	261,900	237,600	440,100
			0.5 ml	55,200	116,400	105,600	195,600
			CBS 0,3 - 0.5 ml	38,640	81,480	73,920	136,920
		Visotubes Ø12 mm (in racks)	0.25 ml	52,360	127,160	112,200	231,880
			0.5 ml	19,040	46,240	40,800	84,320
			CBS 0,3 - 0.5 ml	16,660	40,460	35,700	73,780
Cryo-vials		Boxes of 100 cryo-vials **	2 ml	10,400	22,200	19,800	38,400
		Boxes of 81 cryo-vials	5 ml	3,969	8,262	7,290	15,066
Bags (with casing/without casing)		25 ml	Thermogenesis	960 / -	1,995 / -	1,820 / -	3,465 / -
			Biosafe	768 / -	1,596 / -	1,456 / -	2,772 / -
			PALL	735 / -	1,512 / -	1,344 / -	3,038 / -
		50 ml	Standard (without casing)	- / 432	- / 984	- / 840	- / 1,704
			Baxter	294 / 392	630 / 840	609 / 812	1,176 / 1,568
		200-250 ml	DF200 / Baxter / Macopharma	144 / 192	324 / 432	300 / 400	600 / 800
		500 ml	Baxter / Macopharma	140 / 168	320 / 384	320 / 384	560 / 672
		700-750 ml	DF700	- / 120	- / 252	- / 240	- / 456
			DF700 H / Macopharma	96 / 128	216 / 288	192 / 256	384 / 512
			Baxter 750 ml	- / 112	- / 208	- / 192	- / 368

Storage capacity does not vary between liquid version and gas version

* RT = Rotating Tray ** also compatible with boxes of 25 or 81 cryo-vials

Several **options** available for my **container**

ESSENTIAL	ESSENTIAL+	OPTIMAL
		
CRYOMEMO electronic + automatic filling + filling safety	ESSENTIAL + additional option (choice)	ESSENTIAL+ + full options
	Additional options (choice and according to model) : 1. Degassing kit or 2. Rotating tray	Full options : 1. Degassing kit and 2. Rotating tray



Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels





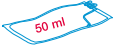




ESPACE 151 Model



I select **the type of container** and **my options**

		ESSENTIAL		ESSENTIAL+	OPTIMAL
		CRYOMEMO electronic + Automatic filling + Filling safety		ESSENTIAL + Degassing kit	ESSENTIAL+ + Rotating tray
With casing	Liquid 	ESP151N-LC-4	ESP151N-LC-5	-	-
	Gas 	ESP151N-GC-3	ESP151N-GC-4	-	-

I add **my inventories** for container **WITHOUT** a rotating tray

	Storage type	Description	Reference
        	Straws in isotubes*/racks	1 Rack 4 Stages (max 7 racks per container) BATCH of 7 Racks	ACC-RACK-39 ACC-RACK-196
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 46 canisters per container) BATCH of 46 canisters and 230 goblets	ACC-PLASCAN-3 ACC-PLASCAN-116
	2 ml cryo-vials in rack	1 Rack 13 Stages for boxes of 81/100 vials (max 7 racks per container) 1 Rack 13 Stages for boxes of 25 vials (max 4 racks per container) BATCH of 7+4 Racks **	ACC-RACK-6 ACC-RACK-9 ACC-RACK-146
	5 ml cryo-vials in rack	1 Rack 7 Stages for boxes of 81 vials (max 7 racks per container) BATCH of 7 Racks	ACC-RACK-29 ACC-RACK-147
	25 ml bags PALL type	1 Rack 7 Stages (max 15 racks per container)	ACC-RACK-204
	25 ml bags THERMOGENESIS type	1 Rack 8 Stages (max 24 racks per container)	ACC-RACK-195
	25 ml bags BIOSAFE type	1 Rack 8 Stages (max 24 racks per container)	ACC-RACK-195
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 14 racks per container) BATCH of 14 Racks	ACC-RACK-37 ACC-RACK-119
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 12 racks per container) BATCH of 12 Racks	ACC-RACK-38 ACC-RACK-115
	700 ml bags GAMBRO type (DF700)	1 Rack 4 Stages (max 7 racks per container) BATCH of 7 Racks	ACC-RACK-34 ACC-RACK-121
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 7 racks per container) BATCH of 7 Racks	ACC-RACK-35 ACC-RACK-122
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 10 racks per container) BATCH of 10 vertical Racks 1 horizontal Rack 4 Stages (max 8 racks per container) BATCH of 8 horizontal Racks	ACC-RACK-32 ACC-RACK-116 ACC-RACK-36 ACC-RACK-174

Storage capacity does not vary between liquid version and gas version

* 85 isotubes per stage

** ESPACE 151 is fully equipped with: 7 racks for boxes of 81 vials + 4 racks for boxes of 25 vials

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

ESPACE 331 Model



I select **the type of container** and **my options**

		OPTIMAL		
		ESSENTIAL	ESSENTIAL+	ESSENTIAL+
		CRYOMEMO electronic + Automatic filling + Filling safety	ESSENTIAL + option (choice) : Degassing kit OR Rotating tray	ESSENTIAL+ + Degassing kit + Rotating tray
With casing	Liquid	ESP331N-LC-7	ESP331N-LC-9 / ESP331N-LC-8	ESP331N-LC-10
	Gas	ESP331N-GC-5	ESP331N-GC-7 / ESP331N-GC-6	ESP331N-GC-8
Without casing	Liquid	ESP331N-LNC-7	ESP331N-LNC-9 / ESP331N-LNC-8	ESP331N-LNC-10
	Gas	ESP331N-GNC-5	ESP331N-GNC-7 / ESP331N-GNC-6	ESP331N-GNC-8

I add **my inventories** for container **WITHOUT** a rotating tray

	Storage type	Description	Reference
	Straws in visotubes*/racks	1 Rack 4 Stages (max 17 racks per container) BATCH of 17 Racks	ACC-RACK-39 ACC-RACK-197
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 97 canisters per container) BATCH of 97 canisters and 485 goblets	ACC-PLASCAN-3 ACC-PLASCAN-105
	2 ml cryo-vials in rack	1 Rack 12 Stages for boxes of 81/100 vials (max 17 racks per container) 1 Rack 12 Stages for boxes of 25 vials (max 6 racks per container) BATCH of 17+6 Racks **	ACC-RACK-5 ACC-RACK-8 ACC-RACK-148
	5 ml cryo-vials in rack	1 Rack 6 Stages for boxes of 81 vials (max 17 racks per container) BATCH of 17 Racks	ACC-RACK-28 ACC-RACK-149
	25 ml bags PALL type	1 Rack 6 Stages (max 36 racks per container)	ACC-RACK-203
	25 ml bags THERMOGENESIS type	1 Rack 7 Stages (max 57 racks per container)	ACC-RACK-202
	25 ml bags BIOSAFE type	1 Rack 7 Stages (max 57 racks per container)	ACC-RACK-202
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 30 racks per container) BATCH of 30 Racks	ACC-RACK-37 ACC-RACK-127
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 27 racks per container) BATCH of 27 Racks	ACC-RACK-38 ACC-RACK-123
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 16 racks per container) BATCH of 16 Racks	ACC-RACK-34 ACC-RACK-129
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 13 racks per container) BATCH of 13 Racks	ACC-RACK-35 ACC-RACK-130
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 21 racks per container) BATCH of 21 vertical Racks 1 horizontal Rack 4 Stages (max 18 racks per container) BATCH of 18 horizontal Racks	ACC-RACK-32 ACC-RACK-124 ACC-RACK-36 ACC-RACK-175

Storage capacity does not vary between liquid version and gas version

* 85 visotubes per stage

** ESPACE 331 without rotating tray is fully equipped with: 17 racks for boxes of 81 vials + 6 racks for boxes of 25 vials





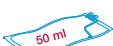






Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

ESPACE 331 Model



I add **my inventories** for container **WITH a rotating tray**

	Storage type	Description	Reference
        	Straws in visotubes*/racks	1 Rack 4 Stages (max 15 racks per container)	ACC-RACK-39
		BATCH of 15 Racks	ACC-RACK-198
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 88 canisters per container)	ACC-PLASCAN-3
		BATCH of 88 canisters and 440 goblets	ACC-PLASCAN-104
	2 ml cryo-vials in rack	1 Rack 12 Stages for boxes of 81/100 vials (max 15 racks per container)	ACC-RACK-5
		1 Rack 12 Stages for boxes of 25 vials (max 6 racks per container)	ACC-RACK-8
		BATCH of 15+6 Racks **	ACC-RACK-150
	5 ml cryo-vials in rack	1 Rack 6 Stages for boxes of 81 vials (max 15 racks per container)	ACC-RACK-28
		BATCH of 15 Racks	ACC-RACK-151
	25 ml bags PALL type	1 Rack 6 Stages (max 32 racks per container)	ACC-RACK-203
	25 ml bags THERMOGENESIS type	1 Rack 7 Stages (max 52 racks per container)	ACC-RACK-202
	25 ml bags BIOSAFE type	1 Rack 7 Stages (max 52 racks per container)	ACC-RACK-202
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 29 racks per container)	ACC-RACK-37
		BATCH of 29 Racks	ACC-RACK-135
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 25 racks per container)	ACC-RACK-38
		BATCH of 25 Racks	ACC-RACK-131
 	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 16 racks per container)	ACC-RACK-34
		BATCH of 16 Racks	ACC-RACK-129
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 12 racks per container)	ACC-RACK-35
		BATCH of 12 Racks	ACC-RACK-137
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 20 racks per container)	ACC-RACK-32
		BATCH of 20 vertical Racks	ACC-RACK-132
		1 horizontal Rack 4 Stages (max 16 racks per container)	ACC-RACK-36
		BATCH of 16 horizontal Racks	ACC-RACK-176

Storage capacity does not vary between liquid version and gas version

* 85 visotubes per stage

** ESPACE 331 with rotating tray is fully equipped with: 15 racks for boxes of 81 vials + 6 racks for boxes of 25 vials

Cryopreservation vessels

ESPACE 661 Model



I select **the type of container** and **my options**

		ESSENTIAL		OPTIMAL
		CRYOMEMO electronic + Automatic filling + Filling safety	ESSENTIAL + Rotating tray	ESSENTIAL+ + Degassing kit
Without casing	Liquid	-	ESP661N-LNC-4	ESP661N-LNC-5
	Gas	-	ESP661N-GNC-3	ESP661N-GNC-4

I add **my inventories** for container **WITH a rotating tray**

	Storage type	Description	Reference
	Straws in visotubes*/racks	1 Rack 4 Stages (max 31 racks per container)	ACC-RACK-39
		BATCH of 31 Racks	ACC-RACK-199
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 163 canisters per container)	ACC-PLASCAN-3
		BATCH of 163 canisters and 815 goblets	ACC-PLASCAN-106
	2 ml cryo-vials in rack	1 Rack 12 Stages for boxes of 81/100 vials (max 31 racks per container)	ACC-RACK-5
		1 Rack 12 Stages for boxes of 25 vials (max 4 racks per container)	ACC-RACK-8
	5 ml cryo-vials in rack	BATCH of 31+4 Racks **	ACC-RACK-152
		1 Rack 6 Stages for boxes of 81 vials (max 31 racks per container)	ACC-RACK-28
	25 ml bags PALL type	BATCH of 31 Racks	ACC-RACK-153
		1 Rack 7 Stages (max 62 racks per container)	ACC-RACK-204
	25 ml bags THERMOGENESIS type	1 Rack 7 Stages (max 99 racks per container)	ACC-RACK-202
		1 Rack 7 Stages (max 99 racks per container)	ACC-RACK-202
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 56 racks per container)	ACC-RACK-37
		BATCH of 56 Racks	ACC-RACK-142
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 50 racks per container)	ACC-RACK-38
		BATCH of 50 Racks	ACC-RACK-138
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 28 racks per container)	ACC-RACK-34
		BATCH of 28 Racks	ACC-RACK-144
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 23 racks per container)	ACC-RACK-35
		BATCH of 23 Racks	ACC-RACK-145
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 38 racks per container)	ACC-RACK-32
		BATCH of 38 vertical Racks	ACC-RACK-139
		1 horizontal Rack 4 Stages (max 32 racks per container)	ACC-RACK-36
		BATCH of 32 horizontal Racks	ACC-RACK-177

Storage capacity does not vary between liquid version and gas version

* 85 visotubes per stage

** ESPACE 661 is fully equipped with: 31 racks for boxes of 81 vials + 4 racks for boxes of 25 vials













Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

ESPACE Range - Accessories



I supplement with accessories

	Storage type	Description	Batch	Reference
	Straws	Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		"Daisy" goblets Ø 65 mm with lid	x 5	ACC-BOXTUBE-302
		Goblets with holes Ø 65 mm with lid	x 10	ACC-BOXTUBE-415
		Stand for goblets (ESPACE 151)	x 1	ACC-BOXTUBE-305
		Bent lifter for canister 5 Stages	x 1	ACC-BOXTUBE-404
		Polygonal visotube	x 100	ACC-BOXTUBE-1
		Visotube Ø 10 mm without lid	x 100	ACC-BOXTUBE-3
		Visotube Ø 12 mm without lid	x 100	ACC-BOXTUBE-4
		Visotube Ø 12 mm with lid	x 100	ACC-BOXTUBE-5
		1ml cryo-vial with skirt white lid	x 100	ACC-BOXTUBE-6
		2ml round bottom cryo-vials with white lid	x 100	ACC-BOXTUBE-11
		Metallic vial holder rod (capacity 6 cryo-vials)	x 10	ACC-BOXTUBE-411
		Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		Bent lifter for canister 5 Stages	x 1	ACC-BOXTUBE-404
		Box 133 x 133 x 51 mm for 100 cryo-vials	x 10	ACC-BOXTUBE-104
		Box 76 x 76 x 51 mm for 25 cryo-vials	x 8	ACC-BOXTUBE-105
Liquid and gas  		Box 133 x 133 x 51 mm for 81 cryo-vials	x 4	ACC-BOXTUBE-106
		5ml round bottom cryo-vials with white lid	x 100	ACC-BOXTUBE-16
		Metallic vial holder rod (capacity 3 cryo-vials)	x 10	ACC-BOXTUBE-411
		Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		Bent lifter for canister 5 Stages	x 1	ACC-BOXTUBE-404
		Box 133 x 133 x 95 mm for 81 cryo-vials	x 4	ACC-BOXTUBE-107
		Cardboard case 9 x 76 x 92 mm	x 700	ACC-BOXTUBE-254
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
		Cardboard case 14 x 83 x 166 mm	x 600	ACC-BOXTUBE-250
		Half-aluminium half-plastic case 17 x 92 x 173 mm	x 1	ACC-BOXTUBE-203
		Aluminium case 17 x 92 x 173 mm	x 1	ACC-BOXTUBE-200
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
		Cardboard case 14 x 155 x 188 mm	x 380	ACC-BOXTUBE-251
		Half-aluminium half-plastic case 17 x 164 x 194 mm	x 1	ACC-BOXTUBE-204
		Aluminium case 17 x 164 x 194 mm	x 1	ACC-BOXTUBE-205
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
		Cardboard case 12 x 138 x 236 mm	x 300	ACC-BOXTUBE-252
		Half-aluminium half-plastic case 15 x 147 x 244 mm	x 1	ACC-BOXTUBE-202
		Aluminium case 15 x 147 x 244 mm	x 1	ACC-BOXTUBE-201
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
		Cardboard case 15 x 155 x 281 mm	x 300	ACC-BOXTUBE-253
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
		Cardboard case 15 x 155 x 281 mm	x 300	ACC-BOXTUBE-253
		Half-aluminium half-plastic case 17 x 164 x 288 mm	x 1	ACC-BOXTUBE-207
		Aluminium case 17 x 164 x 288 mm	x 1	ACC-BOXTUBE-206
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

RCB Range (series 500 to 2000)

Extra-large cryopreservation vessels
for long-term biological samples storage
in straws, cryo-vials and bags

Class IIa Medical Device – Code GMDN 16534



CRYO EQUIPMENT



- Optimal thermal performances thanks to their stainless steel design
- Narrow neck for an optimal holding time
- Adapted for both liquid and gas phase storage
- Capacity up to 1,377,600 straws, 100,000 cryo-vials or 9,400 bags
- Adapted to long-term sample capacity
- Ease-of-use thanks to an optional compensated lid (series for RCB 2000)
- Defogging system to clear the gas vapors after opening for an easier sample removal
- CRYOMEMO electronic device as an option
- 6-year vacuum warranty



Cryopreservation vessels

RCB Range - Technical features



GAS PHASE

Samples are stored in the vapours of nitrogen: no contact between samples and liquid nitrogen.



LIQUID PHASE

Samples are stored and immersed according to level in liquid nitrogen.

SOON AVAILABLE

RCB Range with rotating tray			RCB 500	RCB 600	RCB 1001	RCB 2000
LIQUID OR GAS PHASE			LIQUID	LIQUID GAS	LIQUID GAS	LIQUID GAS
FEATURES						
Maximal capacity - liquid version	LIQUID	l	513	625	996	1,636
Maximal capacity - gas version	GAS	l	-	125	241	223
Empty weight without inventory		kg	290	340	500	790
Full weight without inventory - liquid version	LIQUID	kg	700	860	1,320	2,150
Full weight without inventory - gas version	GAS	kg	-	430	690	970
Maximal load of use		kg	240	260	420	860
Static holding time liquid version ⁽¹⁾	LIQUID	d	100	122	142	155
Static holding time gas version ⁽¹⁾	GAS	d	-	24	34	21
Maximal Daily theoretical evaporation rate ⁽¹⁾		l/d	5.1	5.1	7.0	10.5
Neck diameter		mm	461	461	601	618
Diameter for storage		mm	850	850	1,150	1,354
Height for access from the floor to open the container		mm	1,260	1,440	1,382	1,615
Maximal height to manipulate an inventory		mm	2,060	2,300	2,130	2,570
Width		mm	1,100	1,100	1,350	1,524
External depth		mm	1,160 ⁽²⁾	1,160 ⁽²⁾	1,420 ⁽²⁾	1,557 ⁽²⁾ 1,723 ⁽³⁾ 2,281 ⁽⁴⁾

(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper.

These values are nominal and can vary according to history of the container and manufacturing ranges.

(2) Without footstep

(3) With folded footstep

(4) With unfolded footstep





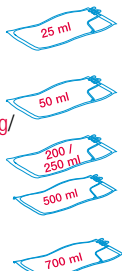

Note: according to container, the building floor must support from 1,000 kg/m² up to 1,600 kg/m² without any deformation.

Cryopreservation vessels

RCB Range - Containers and options

I select **the size of my container** according to **my storage requirement**



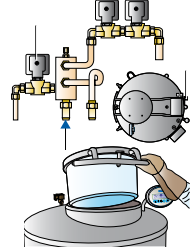
SOON AVAILABLE

Phase			Sample capacity	RCB 500	RCB 600	RCB 1001	RCB 2000
Straws 		Standard goblets Ø 65 mm (in canisters)	0.25 ml	492,000	590,400	922,500	1,377,600
			0.5 ml	219,000	262,800	410,625	613,200
			CBS 0.3 - 0.5 ml	135,000	162,000	253,125	378,000
		Daisy goblets Ø 65 mm (in canisters)	0.25 ml	324,000	388,800	607,500	907,200
			0.5 ml	144,000	172,800	270,000	403,200
			CBS 0.3 - 0.5 ml	100,800	120,960	189,000	282,240
		Visotubes Ø12 mm (in racks)	0.25 ml	149,600	149,600	598,400	703,800
			0.5 ml	54,400	54,400	217,600	275,400
CBS 0.3 - 0.5 ml	47,600		47,600	190,400	183,600		
Cryo-vials 		Boxes of 100 cryo-vials *	2 ml	27,300	29,400	48,000	100,000
		Boxes of 81 cryo-vials	5 ml	11,340	12,960	22,680	43,740
Bags (with casing/ without casing) 		25 ml	Thermogenesis	2,720 / -	3,060 / -	5,040 / -	9,400 / -
			Biosafe	2,176 / -	2,448 / -	4,032 / -	7,520 / -
			PALL	2,058 / -	2,352 / -	4,018 / -	7,182 / -
		50 ml	Standard (without casing)	- / 1,104	- / 1,104	- / 2,208	3,050 / 3,660
			Baxter	756 / 1,008	756 / 1,008	1,470 / 1,960	2,538 / 3,384
		200-250 ml	DF200 - Baxter - Macopharma	384 / 512	384 / 512	744 / 992	1,260 / 1,680
		500 ml	Baxter - Macopharma	360 / 432	360 / 432	720 / 864	1,100 / 1,320
		700-750 ml	DF700	- / 312	- / 312	- / 600	- / 1,188
			DF700 H - Macopharma	240 / 320	240 / 320	456 / 608	990 / 1,320
			Baxter 750 ml	- / 224	- / 224	- / 480	- / 840

Storage capacity does not vary between liquid version and gas version

* also compatible with boxes of 25 or 81 cryo-vials

Several **options** available for my **container**

SIMPLE	ESSENTIAL	OPTIMAL
		
Container without electronic + Compensated lid option	SIMPLE + CRYOMEMO electronic + Automatic filling + Filling safety + Compensated lid option	ESSENTIAL + full options
	<ul style="list-style-type: none"> • level indicator • temperature indicator • server option • output 4-20 mA and RS485 	Full options: 1. Degassing kit and 2. Compensated lid

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

RCB 500 Model



I select **the type of container** and **my options**

	ESSENTIAL		OPTIMAL
	SIMPLE		
	Container without electronic with Rotating tray / Compensated lid option	SIMPLE + CRYOMEMO electronic + Automatic filling + Filling safety / Compensated lid option	ESSENTIAL + Degassing kit + Compensated lid
Liquid	RCB500N-L-1 / RCB500N-L-2	RCB500N-L-9 / RCB500N-L-10	RCB500N-L-12
Gas	- / - *	- / - *	- *

* RCB 500 does not exist in gas phase

I add **my inventories**

	Storage type	Description	Reference
Liquid	Straws in visotubes*/racks	1 Rack 4 Stages (max 20 racks per container)	ACC-RACK-39
		BATCH of 20 Racks	ACC-RACK-200
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 120 canisters per container)	ACC-PLASCAN-3
		BATCH of 120 canisters and 600 goblets and lifters	ACC-PLASCAN-100
	2 ml cryo-vials in rack	1 Rack 13 Stages for boxes of 81/100 vials (max 20 racks per container)	ACC-RACK-6
		1 Rack 13 Stages for boxes of 25 vials (max 4 racks per container)	ACC-RACK-9
		BATCH of 20+4 Racks **	ACC-RACK-168
	5 ml cryo-vials in rack	1 Rack 7 Stages for boxes of 81 vials (max 20 racks per container)	ACC-RACK-29
		BATCH of 20 Racks	ACC-RACK-169
	25 ml bags PALL type	1 Rack 7 Stages (max 42 racks per container)	ACC-RACK-204
	25 ml bags THERMOGENESIS type	1 Rack 8 Stages (max 66 racks per container)	ACC-RACK-195
	25 ml bags BIOSAFE type	1 Rack 8 Stages (max 66 racks per container)	ACC-RACK-195
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 36 racks per container)	ACC-RACK-37
		BATCH of 36 Racks	ACC-RACK-157
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 32 racks per container)	ACC-RACK-38
		BATCH of 32 Racks	ACC-RACK-154
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 18 racks per container)	ACC-RACK-34
		BATCH of 18 Racks	ACC-RACK-159
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 14 racks per container)	ACC-RACK-35
		BATCH of 14 Racks	ACC-RACK-160
700 ml bags GAMBRO type (DF700)		1 vertical Rack 2 Stages (max 26 racks per container)	ACC-RACK-32
		BATCH of 26 vertical Racks	ACC-RACK-155
		1 horizontal Rack 4 Stages (max 20 racks per container)	ACC-RACK-36
		BATCH of 20 horizontal Racks	ACC-RACK-178

* 85 visotubes per stage

** RCB 500 is fully equipped with: 20 racks for boxes of 81 vials + 4 racks for boxes of 25 vials

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

RCB 600 Model



I select **the type of container** and **my options**

		OPTIMAL		
		SIMPLE	ESSENTIAL	ESSENTIAL
		Container without electronic with Rotating tray / Compensated lid option	SIMPLE + CRYOMEMO electronic + Automatic filling + Filling safety / Compensated lid option	ESSENTIAL + Degassing kit + Compensated lid
Liquid		RCB600N-L-1 / RCB600N-L-2	RCB600N-L-9 / RCB600N-L-10	RCB600N-L-12
Gas		- / -	RCB600N-G-5 / RCB600N-G-6	RCB600N-G-8

I add **my inventories** for **liquid phase** version

	Storage type	Description	Reference
	Straws in visotubes*/racks	1 Rack 4 Stages (max 20 racks per container)	ACC-RACK-39
		BATCH of 20 Racks	ACC-RACK-200
	Straws in goblets/canister	1 plastic Canister 6 Stages (max 120 canisters per container)	ACC-PLASCAN-5
		BATCH of 120 canisters and 720 goblets and lifters	ACC-PLASCAN-101
	2 ml cryo-vials in rack	1 Rack 14 Stages for boxes of 81/100 vials (max 20 racks per container)	ACC-RACK-30
		1 Rack 14 Stages for boxes of 25 vials (max 4 racks per container)	ACC-RACK-31
		BATCH of 20+4 Racks **	ACC-RACK-170
	5 ml cryo-vials in rack	1 Rack 8 Stages for boxes of 81 vials (max 20 racks per container)	ACC-RACK-3
		BATCH of 20 Racks	ACC-RACK-171
	25 ml bags PALL type	1 Rack 9 Stages (max 42 racks per container)	ACC-RACK-206
	25 ml bags THERMOGENESIS type	1 Rack 10 Stages (max 66 racks per container)	ACC-RACK-193
	25 ml bags BIOSAFE type	1 Rack 10 Stages (max 66 racks per container)	ACC-RACK-193
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 36 racks per container)	ACC-RACK-37
		BATCH of 36 Racks	ACC-RACK-157
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 32 racks per container)	ACC-RACK-38
		BATCH of 32 Racks	ACC-RACK-154
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 18 racks per container)	ACC-RACK-34
		BATCH of 18 Racks	ACC-RACK-159
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 14 racks per container)	ACC-RACK-35
		BATCH of 14 Racks	ACC-RACK-160
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 26 racks per container)	ACC-RACK-32
		BATCH of 26 vertical Racks	ACC-RACK-155
		1 horizontal Rack 4 Stages (max 20 racks per container)	ACC-RACK-36
		BATCH of 20 horizontal Racks	ACC-RACK-178

* 85 visotubes per stage

** RCB 600 is fully equipped with: 20 racks for boxes of 81 vials + 4 racks for boxes of 25 vials


Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

RCB 600 Model



I add **my inventories** for **gas phase** version

	Storage type	Description	Reference
 Gas	Straws in visotubes*/racks	1 Rack 4 Stages (max 20 racks per container)	ACC-RACK-39
		BATCH of 20 Racks	ACC-RACK-200
	Straws in goblets/canister	1 plastic Canister 6 Stages (max 120 canisters per container)	ACC-PLASCAN-5
		BATCH of 120 canisters and 720 goblets and lifters	ACC-PLASCAN-101
	2 ml cryo-vials in rack	1 Rack 14 Stages for boxes of 81/100 vials (max 20 racks per container)	ACC-RACK-30
		1 Rack 14 Stages for boxes of 25 vials (max 4 racks per container)	ACC-RACK-31
		BATCH of 20+4 Racks **	ACC-RACK-170
	5 ml cryo-vials in rack	1 Rack 8 Stages for boxes of 81 vials (max 20 racks per container)	ACC-RACK-3
		BATCH of 20 Racks	ACC-RACK-171
	25 ml bags PALL type	1 Rack 8 Stages (max 42 racks per container)	ACC-RACK-205
	25 ml bags THERMOGENESIS type	1 Rack 9 Stages (max 66 racks per container)	ACC-RACK-194
	25 ml bags BIOSAFE type	1 Rack 9 Stages (max 66 racks per container)	ACC-RACK-194
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 36 racks per container)	ACC-RACK-37
		BATCH of 36 Racks	ACC-RACK-157
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 32 racks per container)	ACC-RACK-38
		BATCH of 32 Racks	ACC-RACK-154
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 18 racks per container)	ACC-RACK-34
		BATCH of 18 Racks	ACC-RACK-159
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 14 racks per container)	ACC-RACK-35
		BATCH of 14 Racks	ACC-RACK-160
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 26 racks per container)	ACC-RACK-32
		BATCH of 26 vertical Racks	ACC-RACK-155
		1 horizontal Rack 4 Stages (max 20 racks per container)	ACC-RACK-36
		BATCH of 20 horizontal Racks	ACC-RACK-178

* 85 visotubes per stage

** RCB 600 is fully equipped with: 20 racks for boxes of 81 vials + 4 racks for boxes of 25 vials

Cryopreservation vessels

RCB 1001 Model



I select **the type of container** and **my options**

		OPTIMAL		
		SIMPLE	ESSENTIAL	ESSENTIAL
		Container without electronic with Rotating tray / Compensated lid option	SIMPLE + CRYOMEMO electronic + Automatic filling + Filling safety / Compensated lid option	ESSENTIAL + Degassing kit + Compensated lid
Liquid		RCB1001N-L-1 / RCB1001N-L-2	RCB1001N-L-9 / RCB1001N-L-10	RCB1001N-L-12
Gas		- / -	RCB1001N-G-5 / RCB1001N-G-6	RCB1001N-G-8

I add **my inventories** for **liquid phase** version

	Storage type	Description	Reference
Liquid 	Straws in visotubes*/racks	1 Rack 4 Stages (max 40 racks per container) BATCH of 40 Racks	ACC-RACK-39 ACC-RACK-201
	Straws in goblets/canister	1 plastic Canister 5 Stages (max 225 canisters per container) BATCH of 225 canisters and 1,125 goblets and lifters	ACC-PLASCAN-3 ACC-PLASCAN-102
	2 ml cryo-vials in rack	1 Rack 12 Stages for boxes of 81/100 vials (max 40 racks per container) BATCH of 40 Racks	ACC-RACK-5 ACC-RACK-172
	5 ml cryo-vials in rack	1 Rack 7 Stages for boxes of 81 vials (max 40 racks per container) BATCH of 40 Racks	ACC-RACK-29 ACC-RACK-173
	25 ml bags PALL type	1 Rack 8 Stages (max 82 racks per container)	ACC-RACK-205
	25 ml bags THERMOGENESIS type	1 Rack 9 Stages (max 126 racks per container)	ACC-RACK-194
	25 ml bags BIOSAFE type	1 Rack 9 Stages (max 126 racks per container)	ACC-RACK-194
	50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 70 racks per container) BATCH of 70 Racks	ACC-RACK-37 ACC-RACK-164
	200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 62 racks per container) BATCH of 62 Racks	ACC-RACK-38 ACC-RACK-161
	500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 36 racks per container) BATCH of 36 Racks	ACC-RACK-34 ACC-RACK-166
	750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 30 racks per container) BATCH of 30 Racks	ACC-RACK-35 ACC-RACK-167
	700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 50 racks per container) BATCH of 50 vertical Racks	ACC-RACK-32 ACC-RACK-162
		1 horizontal Rack 4 Stages (max 38 racks per container) BATCH of 38 horizontal Racks	ACC-RACK-36 ACC-RACK-179











* 85 visotubes per stage

Cryopreservation vessels

RCB 1001 Model



I add **my inventories** for **gas phase** version

	Storage type	Description	Reference
Gas 	 Straws in isotubes*/racks	1 Rack 4 Stages (max 40 racks per container)	ACC-RACK-39
		BATCH of 40 Racks	ACC-RACK-201
	 Straws in goblets/canister	1 plastic Canister 5 Stages (max 225 canisters per container)	ACC-PLASCAN-5
		BATCH of 225 canisters and 1,125 goblets and lifters	ACC-PLASCAN-102
	 2 ml cryo-vials in rack	1 Rack 12 Stages for boxes of 81/100 vials (max 40 racks per container)	ACC-RACK-5
		BATCH of 40 Racks	ACC-RACK-172
	 5 ml cryo-vials in rack	1 Rack 7 Stages for boxes of 81 vials (max 40 racks per container)	ACC-RACK-29
		BATCH of 40 Racks	ACC-RACK-173
	25 ml bags PALL type	1 Rack 7 Stages (max 82 racks per container)	ACC-RACK-204
	25 ml bags THERMOGENESIS type	1 Rack 8 Stages (max 126 racks per container)	ACC-RACK-195
	25 ml bags BIOSAFE type	1 Rack 8 Stages (max 126 racks per container)	ACC-RACK-195
	 50 ml bags BAXTER type (R4R9951)	1 Rack 7 Stages (max 70 racks per container)	ACC-RACK-37
		BATCH of 70 Racks	ACC-RACK-164
	 200-250 ml bags BAXTER type (R4R9954)/ GAMBRO (DF200)	1 Rack 4 Stages (max 62 racks per container)	ACC-RACK-38
		BATCH of 62 Racks	ACC-RACK-161
	 500 ml bags BAXTER type (R4R9955)	1 Rack 4 Stages (max 36 racks per container)	ACC-RACK-34
		BATCH of 36 Racks	ACC-RACK-166
	 750 ml bags BAXTER type (R4R9957)	1 Rack 4 Stages (max 30 racks per container)	ACC-RACK-35
		BATCH of 30 Racks	ACC-RACK-167
	 700 ml bags GAMBRO type (DF700)	1 vertical Rack 2 Stages (max 50 racks per container)	ACC-RACK-32
		BATCH of 50 vertical Racks	ACC-RACK-162
		1 horizontal Rack 4 Stages (max 38 racks per container)	ACC-RACK-36
		BATCH of 38 horizontal Racks	ACC-RACK-179






* 85 isotubes per stage

Cryopreservation vessels

RCB Range - Accessories



I supplement **with accessories**

	Storage type	Description	Batch	Reference
	Straws	Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		"Daisy" goblets Ø 65 mm with lid	x 5	ACC-BOXTUBE-302
		Goblets with holes Ø 65 mm with lid	x 10	ACC-BOXTUBE-415
		Bent lifter for canister 5 Stages (RCB 500)	x 1	ACC-BOXTUBE-404
		Bent lifter for canister 6 Stages (RCB 600/1001)	x 1	ACC-BOXTUBE-406
		SLEEVE (RCB 600/1001)	x 250	ACC-BOXTUBE-414
		Polygonal visotube	x 100	ACC-BOXTUBE-1
		Visotube Ø 10 mm without lid	x 100	ACC-BOXTUBE-3
		Visotube Ø 12 mm without lid	x 100	ACC-BOXTUBE-4
		Visotube Ø 12 mm with lid	x 100	ACC-BOXTUBE-5
	Cryo-vials 1.2-2 ml	1ml cryo-vial with skirt white lid	x 100	ACC-BOXTUBE-6
		2ml round bottom cryo-vials with white lid	x 100	ACC-BOXTUBE-11
		Metallic vial holder rod (capacity 6 cryo-vials)	x 10	ACC-BOXTUBE-411
		Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		Bent lifter for canister 5 Stages (RCB 500)	x 1	ACC-BOXTUBE-404
		Bent lifter for canister 6 Stages (RCB 600/1001)	x 1	ACC-BOXTUBE-406
		Box 133 x 133 x 51 mm for 100 cryo-vials	x 10	ACC-BOXTUBE-104
		Box 76 x 76 x 51 mm for 25 cryo-vials	x 8	ACC-BOXTUBE-105
		Box 133 x 133 x 51 mm for 81 cryo-vials	x 4	ACC-BOXTUBE-106
		5ml round bottom cryo-vials with white lid	x 100	ACC-BOXTUBE-16
	Cryo-vials 5 ml	Metallic vial holder rod (capacity 3 cryo-vials)	x 10	ACC-BOXTUBE-411
		Standard goblet Ø 65 mm	x 20	ACC-BOXTUBE-301
		Bent lifter for canister 5 Stages (RCB 500)	x 1	ACC-BOXTUBE-404
		Bent lifter for canister 6 Stages (RCB 600/1001)	x 1	ACC-BOXTUBE-406
		Box 133 x 133 x 95 mm for 81 cryo-vials	x 4	ACC-BOXTUBE-107
	Bags 25 ml	Cardboard case 9 x 76 x 92 mm	x 700	ACC-BOXTUBE-254
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
	Bags BAXTER 50 ml	Cardboard case 14 x 83 x 166 mm	x 600	ACC-BOXTUBE-250
		Half-aluminium half-plastic case 17 x 92 x 173 mm	x 1	ACC-BOXTUBE-203
		Aluminium case 17 x 92 x 173 mm	x 1	ACC-BOXTUBE-200
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
	Bags BAXTER/GAMBRO 200-250 ml	Cardboard case 14 x 155 x 188 mm	x 380	ACC-BOXTUBE-251
		Half-aluminium half-plastic case 17 x 164 x 194 mm	x 1	ACC-BOXTUBE-204
		Aluminium case 17 x 164 x 194 mm	x 1	ACC-BOXTUBE-205
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
	Bags BAXTER 500 ml	Cardboard case 12 x 138 x 236 mm	x 300	ACC-BOXTUBE-252
		Half-aluminium half-plastic case 15 x 147 x 244 mm	x 1	ACC-BOXTUBE-202
		Aluminium case 15 x 147 x 244 mm	x 1	ACC-BOXTUBE-201
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
	Bags BAXTER 750 ml	Cardboard case 15 x 155 x 281 mm	x 300	ACC-BOXTUBE-253
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223
	Bags GAMBRO 700 ml	Cardboard case 15 x 155 x 281 mm	x 300	ACC-BOXTUBE-253
		Half-aluminium half-plastic case 17 x 164 x 288 mm	x 1	ACC-BOXTUBE-207
		Aluminium case 17 x 164 x 288 mm	x 1	ACC-BOXTUBE-206
		Marking rack ESPACE / RCB	x 1-100	ACC-RACK-223

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

ESPACE and RCB Range - Accessories



Rotating tray

ESPACE 331 : optional **ACC-ESP-2**
 ESPACE 661 : series
 RCB 500/600/1001 : series



Compensated lid

RCB 500/600 : **ACC-RCB-215**
 RCB 1001 : **ACC-RCB-214**



Separation partition

RCB 500/600 :
 double partition: **ACC-RCB-5**
 triple partition: **ACC-RCB-6**
 quadruple partition: **ACC-RCB-7**
 RCB 1001 :
 double partition: **ACC-RCB-8**
 triple partition: **ACC-RCB-9**
 quadruple partition: **ACC-RCB-10**



Footstep

ESPACE 661 : **ACC-ESP-341**
 RCB 500/600 : **ACC-RCB-213**
 RCB 1001 : **ACC-RCB-212**



Connector hose

Connect containers
 to a nitrogen source.
 1.1 m : **ACC-FL180180NL-11**
 1.5 m : **ACC-FL180180NL-15**
 2.0 m : **ACC-FL180180NL-20**
 3.0 m : **ACC-FL180180NL-30**
 4.0 m : **ACC-FL180180NL-40**



Level indicator

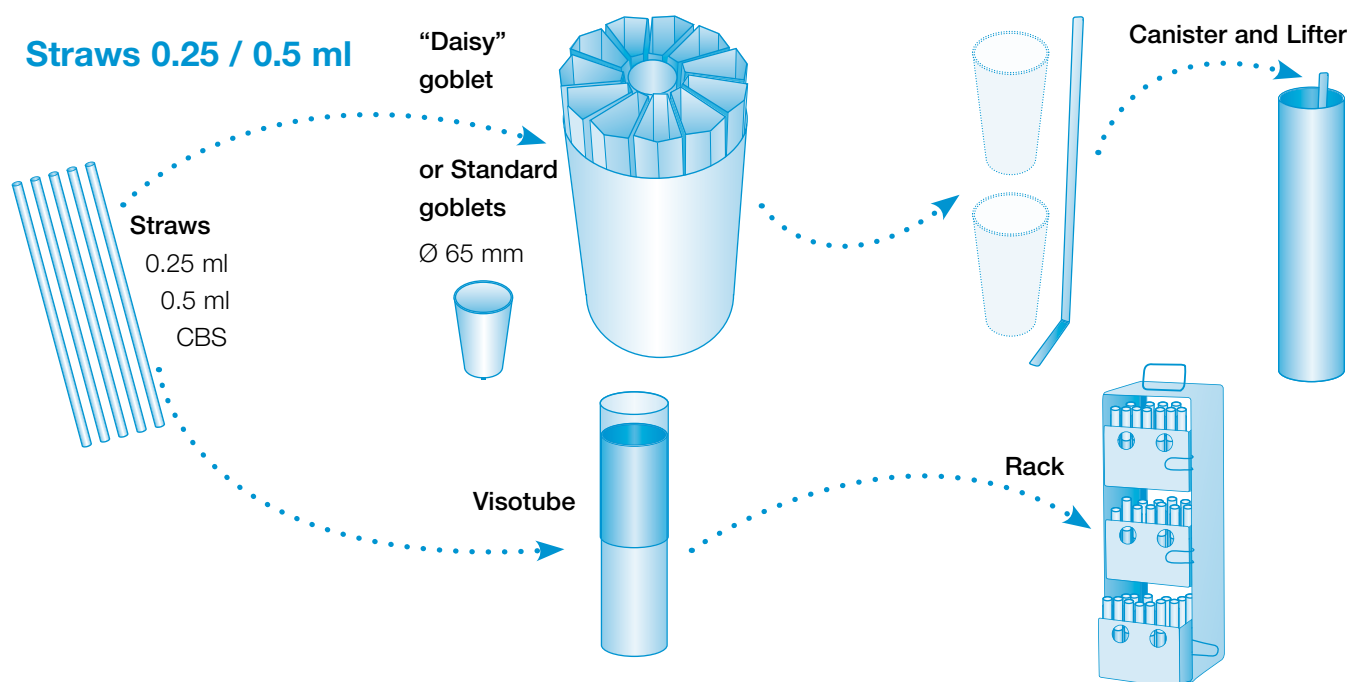
Verification and check of nitrogen
 level manually
ACC-BOXTUBE-412

Cryopreservation vessels

ESPACE et RCB Range - Inventories for straws and bags

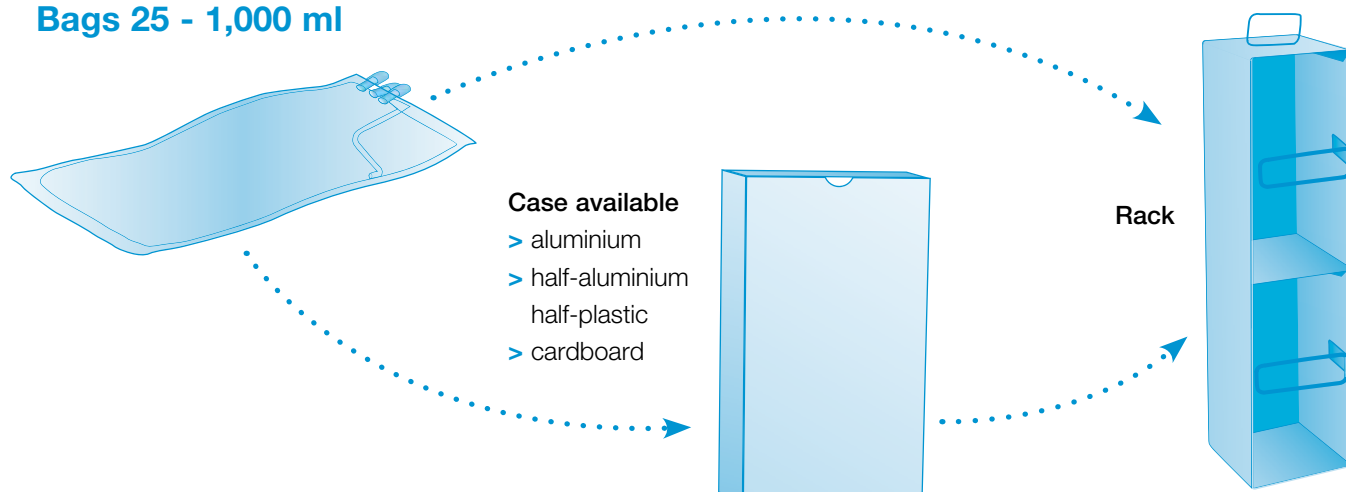
Inventories for straws

Straws 0.25 / 0.5 ml



Inventories for bags

Bags 25 - 1,000 ml

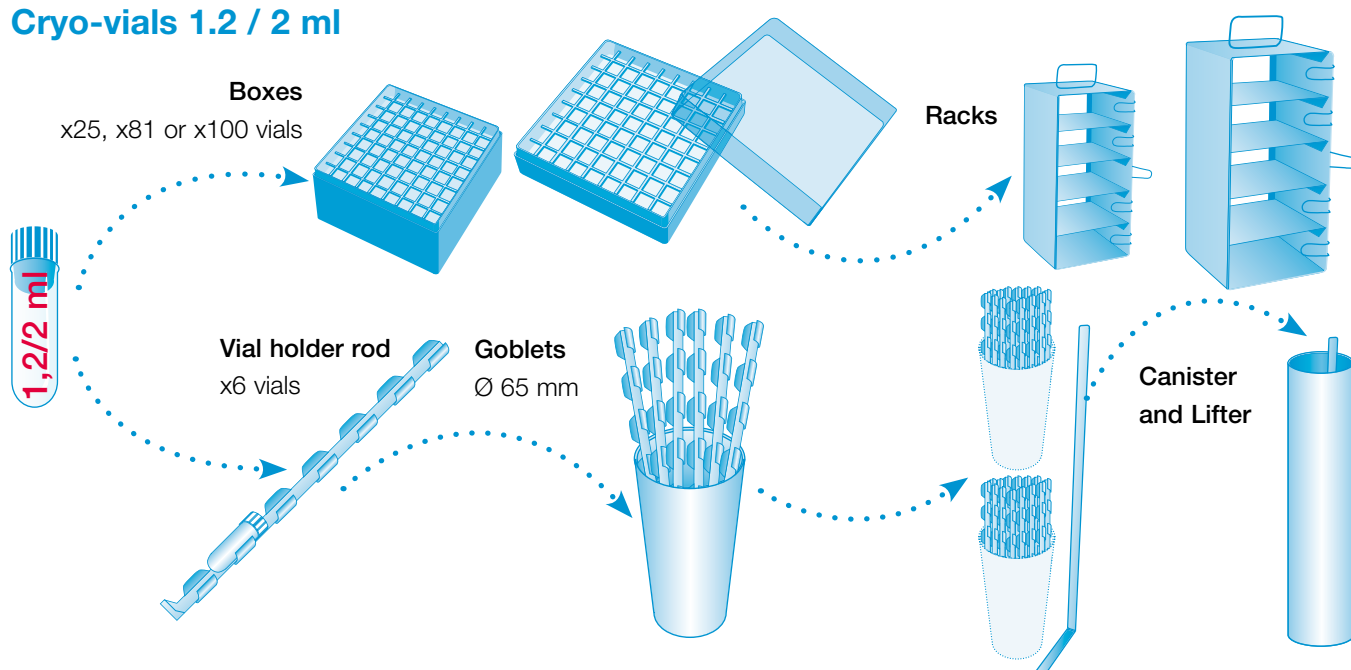


Cryopreservation vessels

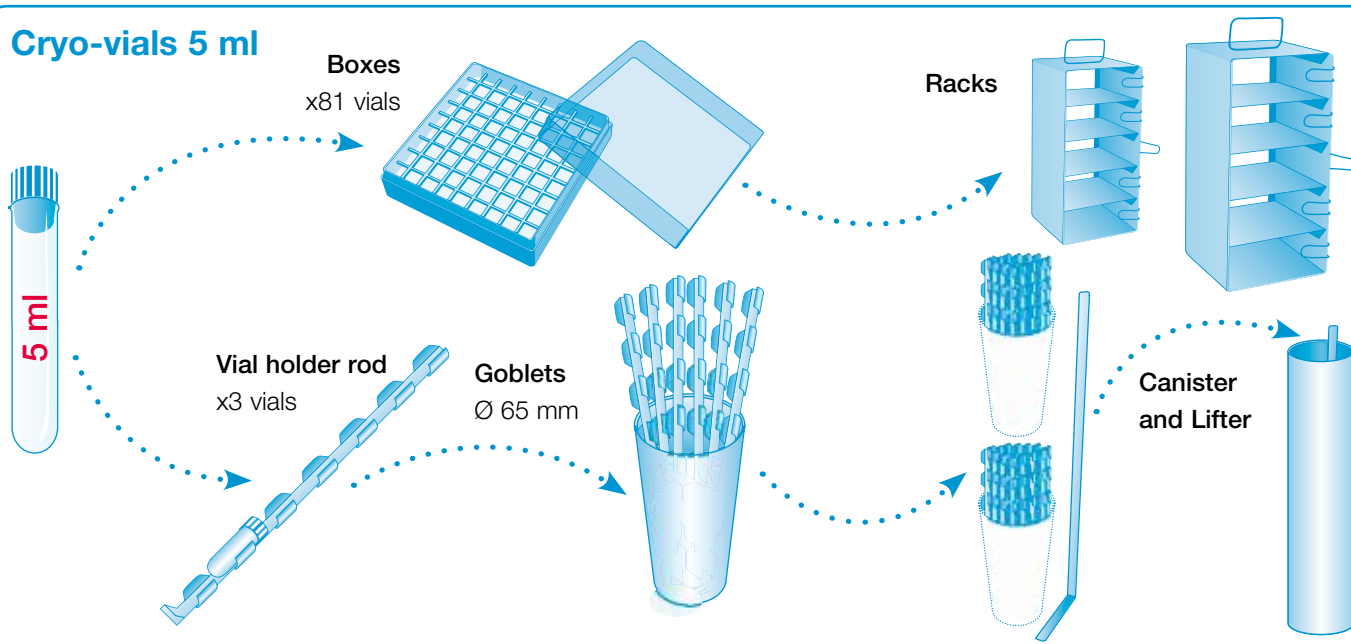
ESPACE et RCB Range - Inventories for cryo-vials

Inventories for cryo-vials

Cryo-vials 1.2 / 2 ml



Cryo-vials 5 ml



Cryopreservation vessels

Case for bags

Protect your bags
of biological samples



FEATURES	Batch	Bags (ml)	Manufacturer (bags)	Bags (type)	Dimensions (mm)	References
Cardboard case	x 700	25	PALL	PALL25	9 x 76 x 92	ACC-BOXTUBE-254
	x 600	50	BAXTER	CRYOCYTE 50	14 x 83 x 166	ACC-BOXTUBE-250
			MACO-PHARMA	GSR1000AU		
	x 380	200 / 250	BAXTER	CRYOCYTE 250	14 x 155 x 188	ACC-BOXTUBE-251
			GAMBRO	DF200		
			MACO-PHARMA	GSR2000AU		
	x 300	500	BAXTER	CRYOCYTE 500	12 x 138 x 236	ACC-BOXTUBE-252
			GAMBRO	DF170		
			MACO-PHARMA	GSR5000AU		
	x 330	700 / 750	BAXTER	CRYOCYTE 750	15 x 155 x 281	ACC-BOXTUBE-253
Aluminium case			GAMBRO	DF700		
	x 1	1 000	GAMBRO	DF1000	15 x 155 x 354	ACC-BOXTUBE-255
		50	BAXTER	BAXTER 50	17 x 92 x 173	ACC-BOXTUBE-200
		200	GAMBRO	DF200	17 x 164 x 194	ACC-BOXTUBE-205
		500	BAXTER	BAXTER 500	15 x 147 x 244	ACC-BOXTUBE-201
Half-aluminium half-plastic case	x 1	700	GAMBRO	DF700	17 x 164 x 288	ACC-BOXTUBE-206
		50	BAXTER	BAXTER 50	17 x 92 x 173	ACC-BOXTUBE-203
		200	GAMBRO	DF200	17 x 164 x 194	ACC-BOXTUBE-204
		500	BAXTER	BAXTER 500	15 x 147 x 244	ACC-BOXTUBE-202
		700	GAMBRO	DF700	17 x 164 x 288	ACC-BOXTUBE-207
		1 000	GAMBRO	DF1000	20 x 164 x 359	ACC-BOXTUBE-208

CRYOGENIC EQUIPMENTS

Transport biological samples

> VOYAGEUR dry shippers (series 2 to Plus)

Cryopreservation vessels

VOYAGEUR Range (series 2 to Plus)

Dry shipper containers for storage and transport of biological samples in straws and cryo-vials

Class IIa Medical Device – Code GMDN 16534

CRYO EQUIPMENT



- Samples shipped in dry phase: liquid nitrogen is trapped as micro-droplets in a porous material; samples are in nitrogen gaseous phase
- In compliance with international regulations for the transport of hazardous goods by road (ADR), air (IATA) and train (RID)
- Lightweight and resistant thanks to their aluminium design
- Different storage solutions (boxes and racks)
- 6-year vacuum warranty

T° TRACKER C

- Optional: for a simple and efficient traceability of temperature



VOYAGEUR 5
with T° TRACKER

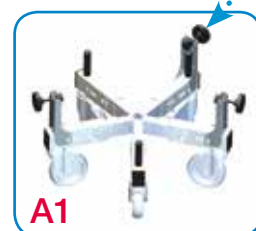


The VOYAGEUR range is **lockable**
(except VOYAGEUR 2, lock not included)



Protective over-packaging B

A2 : Fixation kit for roller base (optional)



A1

Cryopreservation vessels

VOYAGEUR Range - Technical features



VOYAGEUR Range		VOYAGEUR 2	VOYAGEUR 5	VOYAGEUR 12	VOYAGEUR PLUS
FEATURES					
Usable capacity	l	1.75	6.5	15	20.6
Capacity to absorb liquid nitrogen	l	1.4	4.5	10.2	6.8
Empty weight without inventory	kg	2.4	7.5	12.2	14.2
Full weight without inventory	kg	3.5	11.3	20.4	20
Neck diameter	mm	30	50	80	215
External diameter	mm	174	248	308	356
Total height (without T° TRACKER)	mm	395	550	576	575
Total height, compatible T° TRACKER (without T° TRACKER)	mm	-	560	610	-
Static holding time ⁽¹⁾	d	17	37	46	9
Daily theoretical evaporation rate ⁽¹⁾	l/d	0.08	0.12	0.22	0.69
STORAGE CAPACITY & TYPE OF CANISTERS					
Number of canisters		2	2	2	-
Diameter of canisters	mm	26	41	71	-
Height of canisters	mm	120	280	280	-
Number of stage(s) of canisters		1	2	2	-

I select **the size of my container** according to **my storage requirement**

VOYAGEUR Range			VOYAGEUR 2	VOYAGEUR 5	VOYAGEUR 12	VOYAGEUR PLUS
Straws 	Standard goblets (in canisters)	0.25 ml	220	800	3,280	9,840
		0.5 ml	100	376	1,460	4,380
		CBS 0.3-0.5 ml	70	300	900	2,700
	Daisy goblets Ø 65 mm (in canisters)	0.25 ml	-	-	2,160	6,480
		0.5 ml	-	-	960	1,880
		CBS 0.3-0.5 ml	-	-	672	2,016
Cryo-vials 	On vial holder rod in canisters 2 stages	1.2-2 ml	-	84	240	612
		5 ml	-	42	120	306
	Boxes (in rack)	1.2-2 ml ⁽²⁾	-	-	-	500
		5 ml ⁽³⁾	-	-	-	162
Bags 	In rack : with casing ⁽⁴⁾ / without casing	25 ml	-	-	-	42 / -
		50 ml	-	-	-	- / 12
		200-250 ml	-	-	-	- / 6
		500 ml	-	-	-	- / 6
		700 ml	-	-	-	- / 6
		750 ml	-	-	-	- / 6

(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

(2) Boxes of 100 cryo-vials 2 ml

(3) Boxes of 81 cryo-vials 5 ml

(4) With Thermogenesis, Biosafe, PALL bags

Cryopreservation vessels

VOYAGEUR Range - Inventories

I add **my inventories** then complete with **accessories**

VOYAGEUR Range	VOYAGEUR 2	VOYAGEUR 5	VOYAGEUR 12	VOYAGEUR PLUS
PRODUCTS REFERENCES				
VOYAGEUR without canister	-	-	-	VOYAGEUR20-2
VOYAGEUR incl. 2 canisters	VOYAGEUR2-1	VOYAGEUR5-2	VOYAGEUR12-2	-
VOYAGEUR incl. 2 canisters, compatible T°TRACKER (without T° TRACKER)	-	VOYAGEUR5-2-TT	VOYAGEUR12-2-TT	-
REFERENCES OF INVENTORIES AND ACCESSORIES				
A1 : Lockable roller base (height: 220 mm)	-	-	-	ACC-ALU-29
A2 : Fixation kit for roller base (option)	-	-	-	ACC-ALU-32
B : Protective over-packaging	ACC-VOY-100	ACC-VOY-101	ACC-VOY-102	ACC-VOY-103
Travel cover	ACC-VOY-105	-	-	-
Blue cover	-	ACC-VOY-7	ACC-VOY-7	-
C : T° TRACKER	TRACKER-1	TRACKER-1	TRACKER-1	TRACKER-1
D1 : Lid for version stainless steel canister	-	ACC-VOY-4	ACC-VOY-5	ACC-VOY-6
D2 : Lid for version plastic canister	ACC-ALU-18	-	-	-
BATCH of 100 2ml round bottom vials with white lid	-	ACC-BOXTUBE-11	ACC-BOXTUBE-11	ACC-BOXTUBE-11
BATCH of 100 5ml round bottom vials with white lid	-	ACC-BOXTUBE-16	ACC-BOXTUBE-16	ACC-BOXTUBE-16
BATCH of 10 metallic vial holder rods for 6 vials (2ml) or 3 vials (5ml)	-	ACC-BOXTUBE-411	ACC-BOXTUBE-411	ACC-BOXTUBE-411
BATCH of 20 standard goblets Ø 35 mm	-	ACC-BOXTUBE-300	-	-
BATCH of 20 standard goblets Ø 65 mm	-	-	ACC-BOXTUBE-301	ACC-BOXTUBE-301
BATCH of 5 "daisy" goblets Ø 65 mm with lid	-	-	ACC-BOXTUBE-302	ACC-BOXTUBE-302
BATCH of 10 goblets with holes Ø 65 mm with lid	-	-	ACC-BOXTUBE-415	ACC-BOXTUBE-415
BATCH of 10 boxes 133x133x51mm (capacity: 100 vials 1.2/2 ml)	-	-	-	ACC-BOXTUBE-104
BATCH of 4 boxes 133x133x95mm (capacity: 81 vials 5 ml)	-	-	-	ACC-BOXTUBE-107
Lifter for 2-stages canister	-	ACC-BOXTUBE-405	ACC-BOXTUBE-405	ACC-BOXTUBE-405
E : Centered canisters	ACC-PLASCAN-7	ACC-PLASCAN-10	ACC-PLASCAN-11	-
Eccentric canisters	ACC-PLASCAN-6	ACC-PLASCAN-9	ACC-PLASCAN-8	-
F : Rack 5 Stages for boxes (75x75x51mm) of 25 vials 2 ml	-	-	-	ACC-RACK-7
G : Rack 5 Stages for boxes (133x133x51mm) of 100 vials 2 ml	-	-	-	ACC-RACK-4
Rack 2 Stages for boxes (133x133x95mm) of 81 vials 5 ml	-	-	-	ACC-RACK-2
H : Rack 3 Stages for bags 25 ml	-	-	-	ACC-RACK-316



Rack for boxes
of 25 vials 2 ml **F**

Rack for boxes
of 100 vials 2 ml **G**



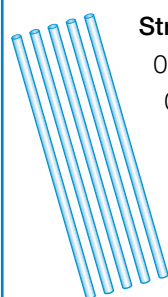
Rack for bags 25 ml **H**

Racks, canisters and CRYOMEMO electronic system are class I medical devices.

Cryopreservation vessels

VOYAGEUR Range - Inventories

Inventories VOYAGEUR 2



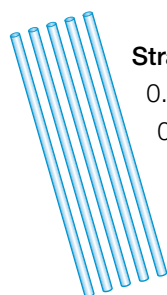
Straws

0.25 ml
0.5 ml
CBS

Plastic canister
1 stage



Inventories VOYAGEUR 5 and 12



Straws

0.25 ml
0.5 ml
CBS

Goblets

VOYAGEUR 5: ø 35 mm
VOYAGEUR 12: ø 65 mm

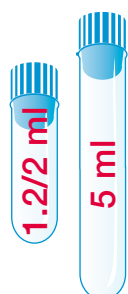
Lifter to extract
2 goblets from
2-stage canister



Stainless steel canister



Cryo-vials



Vial holder rods

1.2-2 ml : x6 vials
5 ml : x3vials



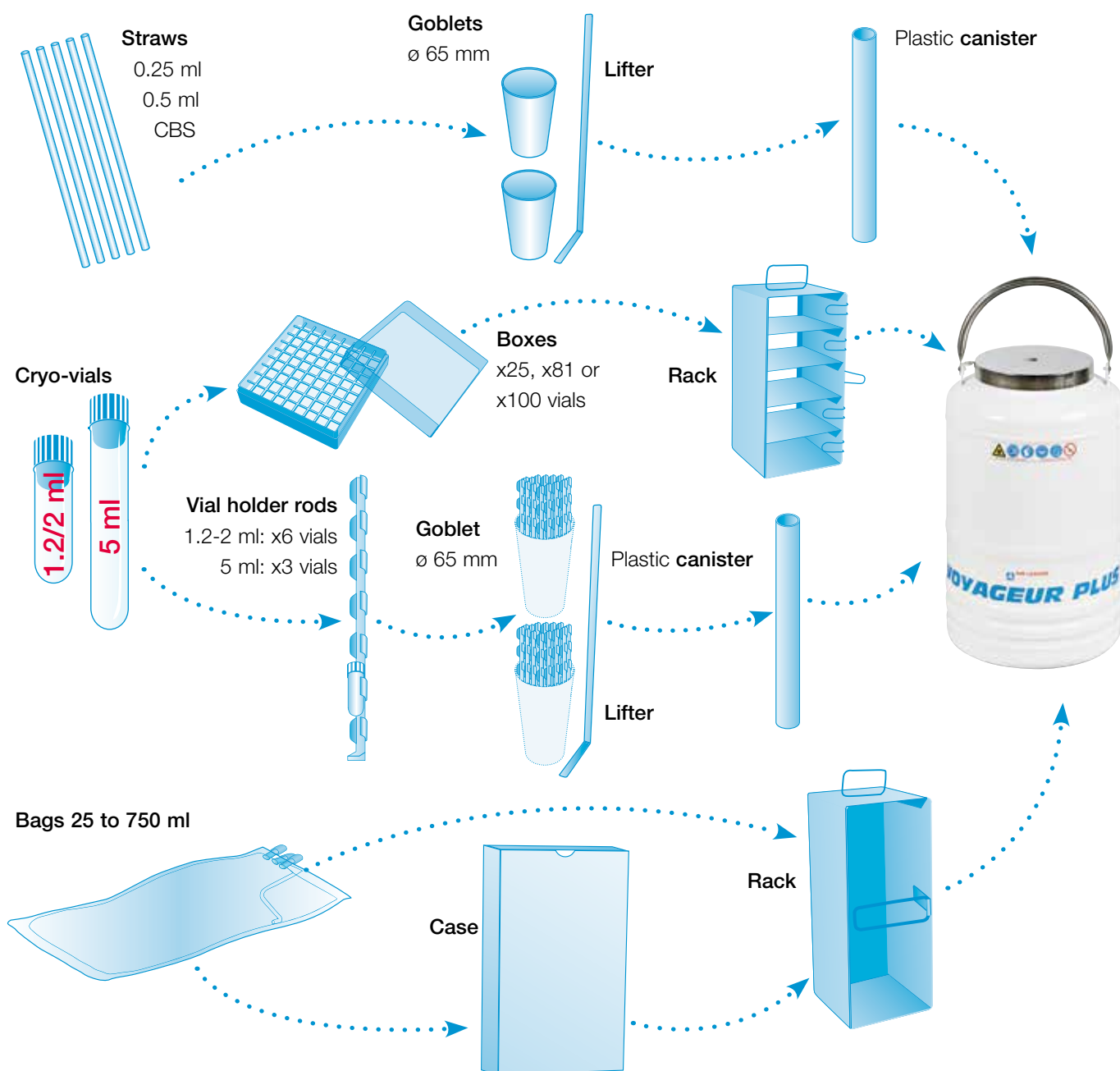
Stainless steel canister



Cryopreservation vessels

VOYAGEUR Range - Inventories

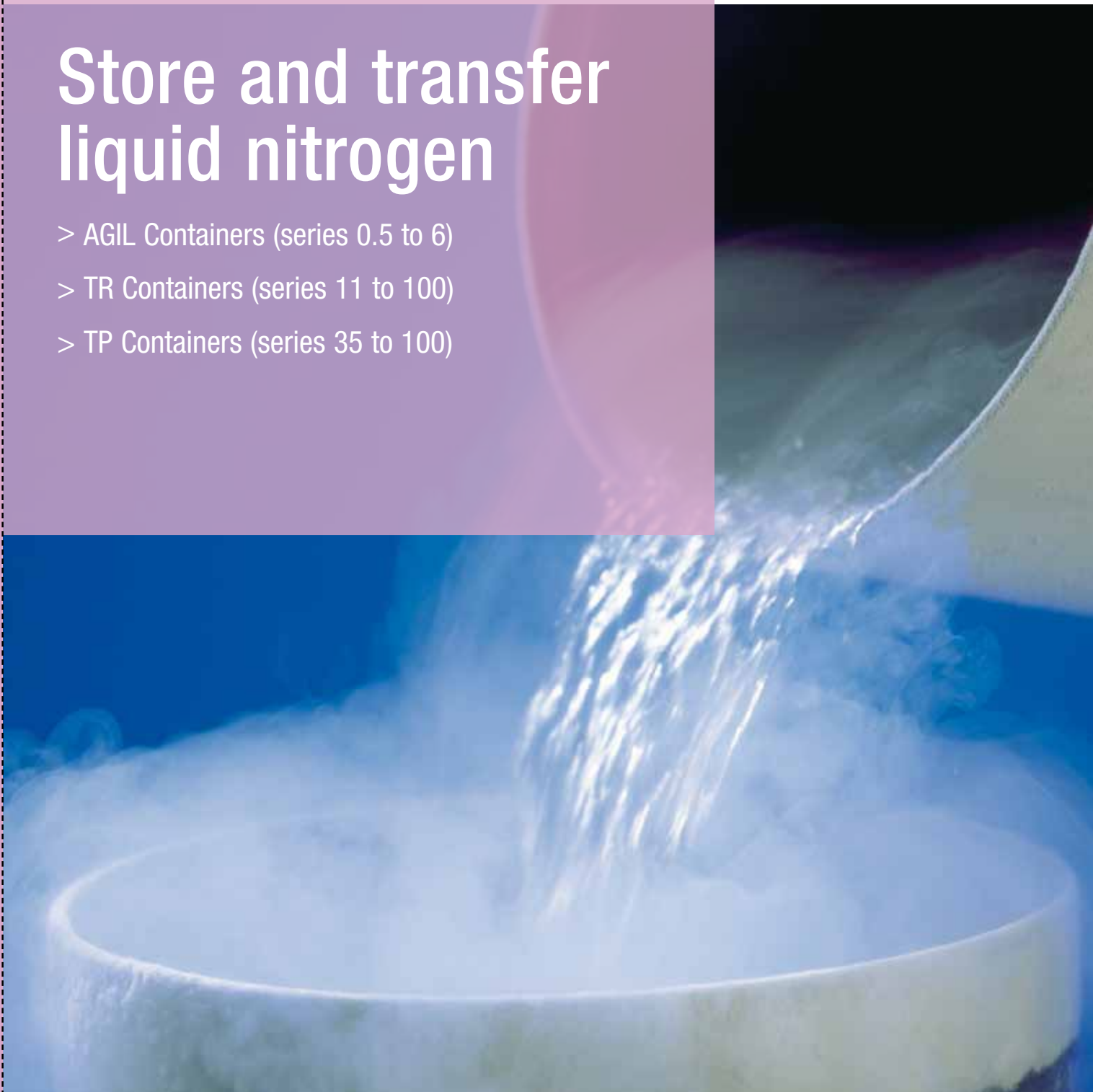
Inventories VOYAGEUR PLUS



CRYOGENIC EQUIPMENTS

Store and transfer liquid nitrogen

- > AGIL Containers (series 0.5 to 6)
- > TR Containers (series 11 to 100)
- > TP Containers (series 35 to 100)



Small volume containers

AGIL Range (series 0.5 to 6)

Dewars from 0.5 to 6 liters used
for laboratory handling
small quantities of liquid nitrogen

CRYO EQUIPMENT



- Capacity from 0.5 to 6 L
- Stainless steel containers
- Tipping handle for a better grip
- Cork lid (optional)
- Temperature from -200°C to +200°C



Use

- > Have small quantities of liquid nitrogen in a laboratory for daily requirements

Main features

Quality / Flexibility

- > Stainless steel construction
- > Possibility of working with temperature ranges between -200°C and +200°C
- > Use with liquid oxygen is forbidden

Ease of use

- > Tipping handle
- > Compact container for laboratory use

Small volume containers

AGIL Range (series 0.5 to 6)



AGIL Range		AGIL 0.5	AGIL 1	AGIL 1/L	AGIL 2	AGIL 3	AGIL 6
FEATURES							
Usable capacity	l	0.5	1	1	2	3	6
Interior diameter	mm	65	85	100	100	185	185
External diameter	mm	87	107	122	122	200	200
Empty weight	kg	0.56	0.95	0.80	1.35	1.78	2.40
Total height	mm	203	231	177	312	190	300
Static holding time at 20°C with cork lid ⁽¹⁾	h	12	26	15	43	23	49
Daily theoretical evaporation rate at 20°C without cork lid ⁽¹⁾	l/d	1	0.9	1.6	1.1	3.1	2.9
PRODUCT REFERENCES							
AGIL range (supplied without cork lid)		AGIL05-2	AGIL1-2	AGIL1L-2	AGIL2-2	AGIL3-2	AGIL6-2
REFERENCES FOR PRIMARY ACCESSORIES							
A : Cork lid (optional)		ACC-AGIL-1	ACC-AGIL-2	ACC-AGIL-3	ACC-AGIL-3	ACC-AGIL-4	ACC-AGIL-4
B : Protective glasses		ACC-SECU-2	ACC-SECU-2	ACC-SECU-2	ACC-SECU-2	ACC-SECU-2	ACC-SECU-2
C : Protective gloves (Size 8)		ACC-SECU-15	ACC-SECU-15	ACC-SECU-15	ACC-SECU-15	ACC-SECU-15	ACC-SECU-15
Protective gloves (Size 9)		ACC-SECU-16	ACC-SECU-16	ACC-SECU-16	ACC-SECU-16	ACC-SECU-16	ACC-SECU-16
Protective gloves (Size 10)		ACC-SECU-17	ACC-SECU-17	ACC-SECU-17	ACC-SECU-17	ACC-SECU-17	ACC-SECU-17
Protective gloves (Size 11)		ACC-SECU-18	ACC-SECU-18	ACC-SECU-18	ACC-SECU-18	ACC-SECU-18	ACC-SECU-18

Primary accessories



(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container. These values are nominal and can vary according to history of the container and manufacturing ranges.

Containers

Non-pressurized TR Range (series 11 to 100)

Non-pressurized dewars from 12 to 100 liters
used for storing and transferring liquid nitrogen

CRYO EQUIPMENT



- Capacity from 12 to 100 L
- Limited evaporation rate
- Static holding time up to 180 days
- Possibility to fill different cryogenic containers

Protective
Insulating lid



Pumping valve

Strap DN 50 mm



Main features

Quality

- > Design in aluminium and composite material
- > High quality polyurethane paint
- > Single strap of Ø 50 mm

Possibility of transferring liquid nitrogen by

- > Tipping handle **C**
- > Tipping stand **E**
- > DL3 withdrawal device **D**

Tipping handle **C**

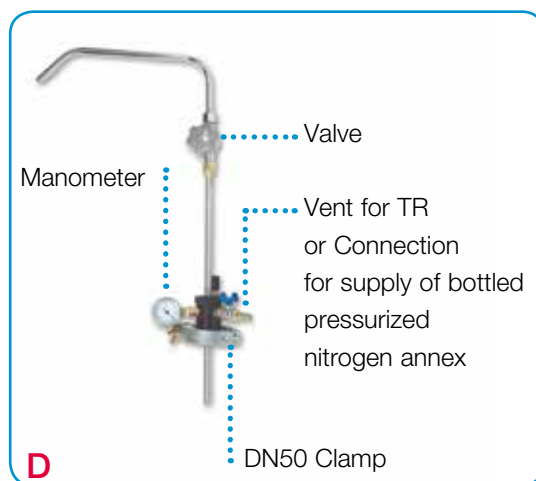
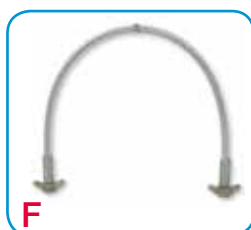
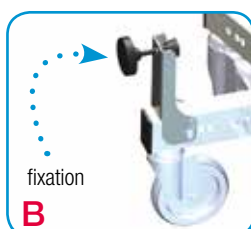
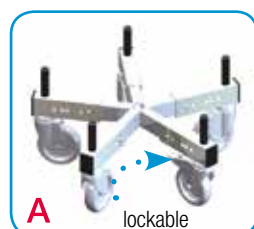


Containers

Non-pressurized TR Range (series 11 to 100)



TR Range		TR11	TR21	TR26	TR35	TR60	TR100
FEATURES							
Usable capacity	l	12.2	21.5	26	33.6	60	99
Neck diameter	mm	50	50	50	50	50	50
External diameter	mm	308	388	388	468	468	510
Empty weight	kg	7.5	11.0	13.5	15.8	21.5	29.5
Full weight	kg	17.3	28.3	34.6	43	70	110
Total height	mm	584	605	669	655	869	986
Total interior height	mm	530	535	612	580	800	933
Static holding time ⁽¹⁾	d	67	119	130	140	150	180
Daily theorerical evaporation rate ⁽¹⁾	l/d	0.18	0.18	0.2	0.24	0.4	0.55
PRODUCT REFERENCES							
Reference to order		TR11-1	TR21-1	TR26-1	TR35-1	TR60-1	TR100-1
REFERENCES FOR PRIMARY ACCESSORIES							
A : Lockable roller base (height: 220 mm)	-	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29	ACC-ALU-29
B : Fixation kit for roller base (option)	-	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32	ACC-ALU-32
C : Tipping handle	ACC-TR-15	ACC-TR-16	ACC-TR-16	-	-	-	-
D : DL3 withdrawal device	ACC-TR-5						
E : Tipping stand	-	ACC-TR-17	ACC-TR-17	ACC-TR-18	-	-	-
F : Transfer hose (DN10)	1.1 m	ACC-FL180180NL-11					
	1.5 m	ACC-FL180180NL-15					
	2.0 m	ACC-FL180180NL-20					
	3.0 m	ACC-FL180180NL-30					
	4.0 m	ACC-FL180180NL-40					
Hose with transfer rod (DN10)		F + G1 ou F + G2					
G1 : Transfer rod with tap swirl nozzle		ACC-FLTC-2					
G2 : Transfer rod without tap swirl nozzle		ACC-FLTC-1					
H : Protective isolating lid		ACC-TR-14					



(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

Containers

Auto-pressurized TP Range (series 35 to 100)

Auto-pressurized dewars (0.5 bar) from 35 to 100 liters
used for storing and transferring liquid nitrogen

CRYO EQUIPMENT



- Capacity from 35 to 100 L
- Auto-pressurized containers at 0.5 bar
- Limited evaporation rate
- Static holding time up to 75 days
- Possibility to fill different cryogenic containers

Removable command “Head”

- 1 Ballcock level indicator
- 2 Manometer
- 3 Two protective valves tared at 0.5 bar
- 4 Extraction valve
- 5 Air inlet valve

Auto-pressurization system (supplied as standard)

- 6 Pressure regulator
- 7 Pressurization valve

Main features

Ease of use

- > Nitrogen available upon opening of extraction valve
- > TP35 can be placed under a laboratory bench
- > An additional handrail can be installed **B**

Possibility of transferring liquid nitrogen

- > Double-valve outlet option available **C**

Quality

- > Design in aluminium and composite material
- > High quality polyurethane paint

Hose with
transfert rod **E**



Containers

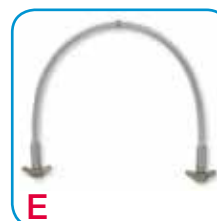
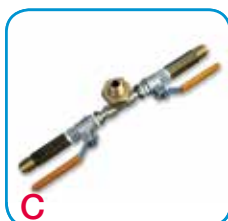
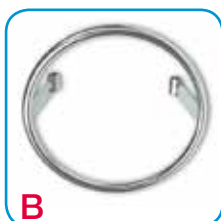
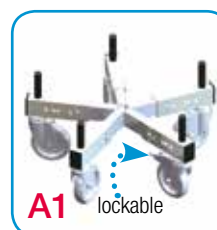
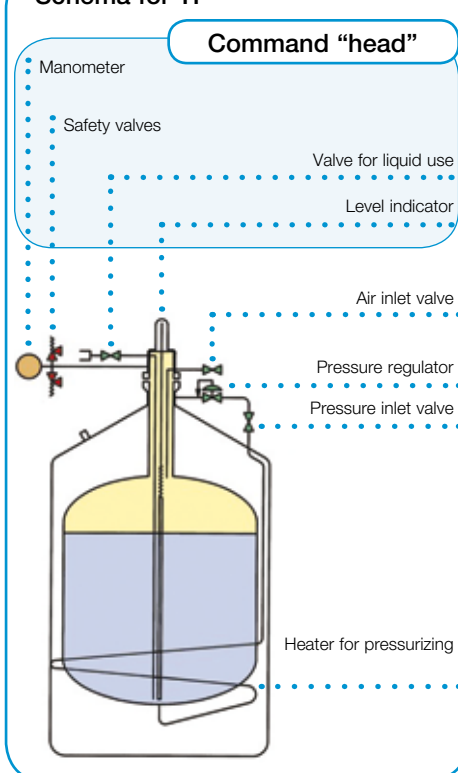
Auto-pressurized TP Range (series 35 to 100)



TP Range		TP35	TP60	TP100
FEATURES				
Usable capacity	l	35	60	98
Neck diameter	mm	50	50	50
External diameter	mm	468	468	510
Empty weight (with command head)	kg	19.8	26.4	33.5
Full weight (with command head)	kg	48	74.5	113.5
Total height (with command head)	mm	853	1,080	1,213
Total interior height	mm	580	815	945
Static holding time ⁽¹⁾	d	35	60	75
Daily theoretical evaporation rate (with command head) ⁽¹⁾	l/d	1	1	1.3
Maximum pressure for standard service	bar	0.5	0.5	0.5
Maximum flow (P=0.5 bar) ⁽²⁾	l/min	2.4	3.5	5.2

PRODUCTS REFERENCES				
TP with command head and pressure regulator		TP35-1	TP60-1	TP100-1
TP without head (pressure regulator included)		TP35-2	TP60-2	TP100-2
REFERENCES FOR PRIMARY ACCESSORIES				
A1 : Lockable roller base (height: 220 mm)		ACC-ALU-29	ACC-ALU-29	ACC-ALU-29
A2 : Fixation kit for roller base (option)		ACC-ALU-32	ACC-ALU-32	ACC-ALU-32
B : Handrail		ACC-ALU-21	ACC-ALU-21	ACC-ALU-21
C : Double extraction system		ACC-TP-21	ACC-TP-21	ACC-TP-21
D : Extraction angle with tap swirl for TP		ACC-TP-17	ACC-TP-17	ACC-TP-17
E : Transfer hose (DN10)	1.1 m	ACC-FL180180NL-11		
	1.5 m	ACC-FL180180NL-15		
	2.0 m	ACC-FL180180NL-20		
	3.0 m	ACC-FL180180NL-30		
	4.0 m	ACC-FL180180NL-40		
Hose with transfer rod (DN10)		E + F1 ou E + F2		
F1 : Transfer rod with tap swirl nozzle		ACC-FLTC-2	ACC-FLTC-2	ACC-FLTC-2
F2 : Transfer rod without tap swirl nozzle		ACC-FLTC-1	ACC-FLTC-1	ACC-FLTC-1

Schéma for TP



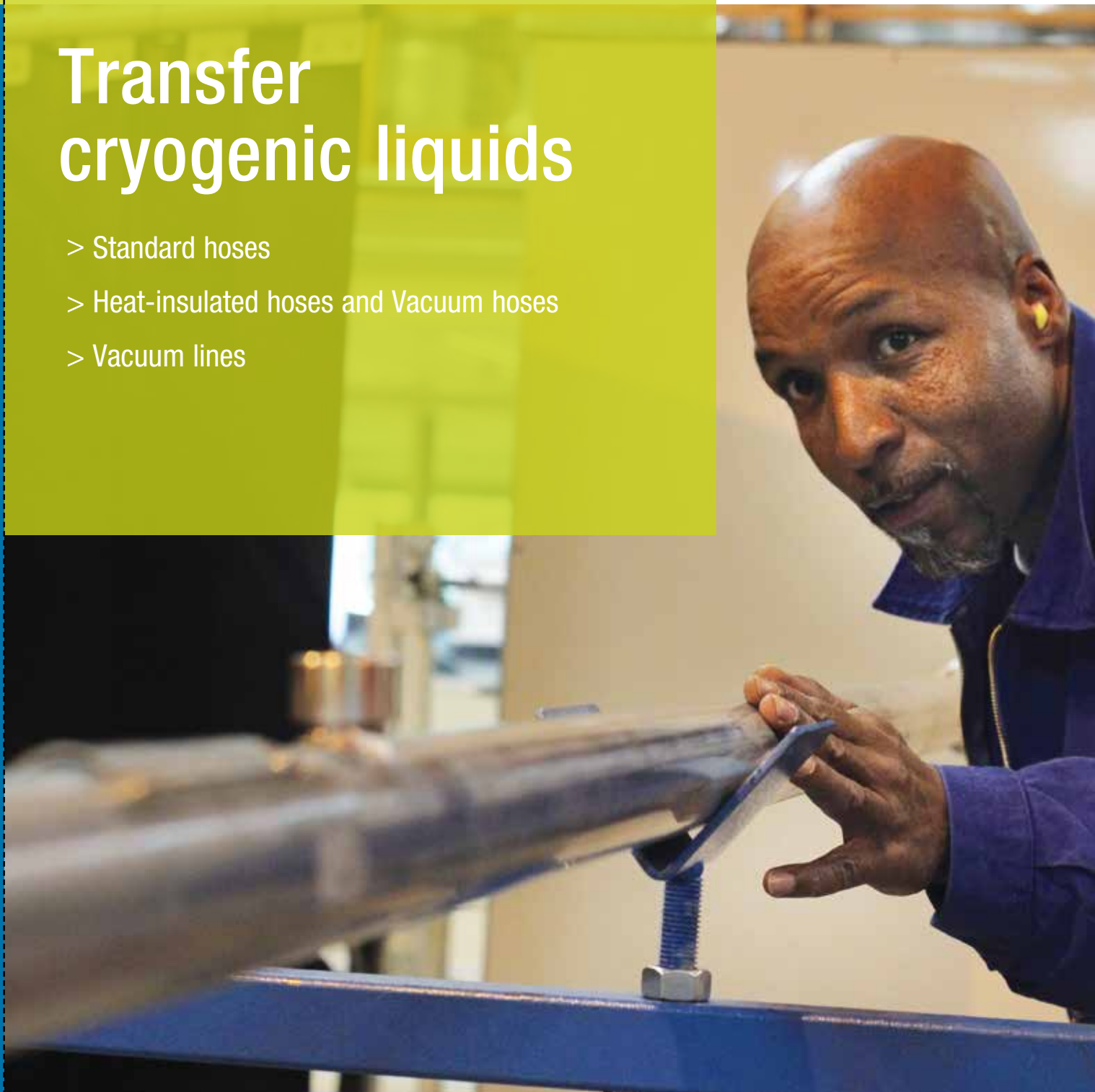
(1) Assessment of static holding times are done in agreement with conditions described within ISO 21014 norm extrapolated to assessed volumes according to theoretical models. Daily evaporation and static holding time at 20°C, 1 013 mb, immobile container and sealed stopper. These values are nominal and can vary according to history of the container and manufacturing ranges.

(2) Indicative value likely to vary greatly depending on extraction duration.

CRYOGENIC EQUIPMENTS

Transfer cryogenic liquids

- > Standard hoses
- > Heat-insulated hoses and Vacuum hoses
- > Vacuum lines



Standard hoses

Pipeline systems for cryogenics fluids

CRYO EQUIPMENT

You would like to fill **A** from **B**

B



TP35
TP60
TP100



Euro-Cyl



Ranger 180

Manual filling (with extraction rod)



or

TC Rod

+



Hose 180/180

A

TP



VOYAGEUR



AGIL



GT



ARPEGE



TR



Automatic filling (direct connection)



Hose 180/180

A



ARPEGE

TP



Standard hoses

You would like to fill **A** from **B**

B



Euro-Cyl



Ranger 450



Ranger 630

Manual filling (with extraction rod)



or

TC Rod



Hose 630/180

A



AGIL

VOYAGEUR

GT

ARPEGE

TR

Automatic filling (direct connection)



Hose 630/180

A



ARPEGE

B



Storage

Automatic filling (direct connection)



Hose 630/180



TP 100



Euro-Cyl



Ranger 180



Hose 630/630



Ranger 450

A



Ranger 630

Standard hoses

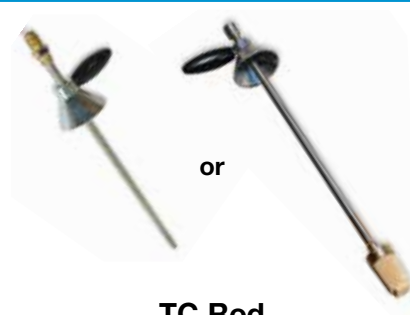
You would like to fill **A** from **B**

B



Vacuum Line

Manual filling (with extraction rod)



or

TC Rod

+



Hose 180/180

A



AGIL



VOYAGEUR



GT



TR



ARPEGE

Automatic filling (direct connection)



Hose 180/180

RCB



A

ESPACE



ARPEGE



TP



> Heat-insulated hoses and Vacuum hoses

B.B.O. hoses (insulated) are used to transfer your cryogenic fluids (liquid nitrogen or argon). Standard and V.I.P. hoses (vacuum insulated) are used to transfer cryogenic fluids with better performance and safety than non-insulated hoses.

Main advantages

- > Appearance of delayed frost for the B.B.O. hoses, and absence of frost for the V.I.P. hoses
- > Reduced liquid nitrogen consumption
- > Connection for 180NL cable (wing nuts) or 3-part cable
- > Stainless steel quality (304 L / 316 L)
- > Reduced camber range
- > Stainless steel protective cover

Uses

- > Cryobiology (health, pharmaceutical products...)
- > Chemistry
- > Electronics (semi-conductors...)
- > Foodstuffs
- > Industry, steel industry...



3-part cable



180NL cable

BBO hoses			
Ø	Connection	Length	Reference
DN8	1/4 BSP-T (Gas con.)	1 m	ACC-FLBBONL-DN8-1
		2 m	ACC-FLBBONL-DN8-2
		3 m	ACC-FLBBONL-DN8-3
DN8	180 NL	1 m	ACC-FLBBONL-DN8-4
		2 m	ACC-FLBBONL-DN8-5
		3 m	ACC-FLBBONL-DN8-6
DN15	1/2 BSP-T (Gas con.)	1 m	ACC-FLBBONL-DN15-1
		2 m	ACC-FLBBONL-DN15-2
		3 m	ACC-FLBBONL-DN15-3

VIP vacuum isolated hoses			
Ø	Connection	Length	Reference
DN8	Wing nuts	2 m	ACC-FLVIPNL-DN8-2
		4 m	ACC-FLVIPNL-DN8-4
DN8	3-part nuts	2 m	FLEX-VIP-2M
		4 m	FLEX-VIP-4M

Standard vacuum isolated hoses		
DN	Length	Reference
DN10	2 m	NH99410-2M
	5 m	NH99410-5M
	10 m	NH99410-10M
	20 m	NH99410-20M
DN20	2 m	NH99420-2M
	5 m	NH99420-5M
	10 m	NH99420-10M
	20 m	NH99420-20M
DN32	5 m	NH99532-5M
	10 m	NH99532-10M

Features

Standard vacuum isolated hoses are available in 3 diameters (DN10, DN20 and DN32) and different lengths. The maximum service pressure is 6 bars. Hoses in stock with possibility of rental or sale.

Join

Coupling by nozzles to be soldered (BW) and insulation by P.U. sleeve

Vacuum lines

The super-insulated vacuum lines, rigid or flexible, maximize the transfer performance for cryogenic fluids (liquid nitrogen, liquid argon, liquid carbon dioxide, liquid oxygen).

Pre-fabricated in our factory based on customer needs, they are connected on site by soldering, or screwed by a male-female coupling.

Advantages

- > Excellent thermal performances (low consumption)
- > No maintenance
- > Maximum security
- > Stainless steel quality (304 L)
- > Reduced size
- > No formation of ice or frost (on the vacuum parts)

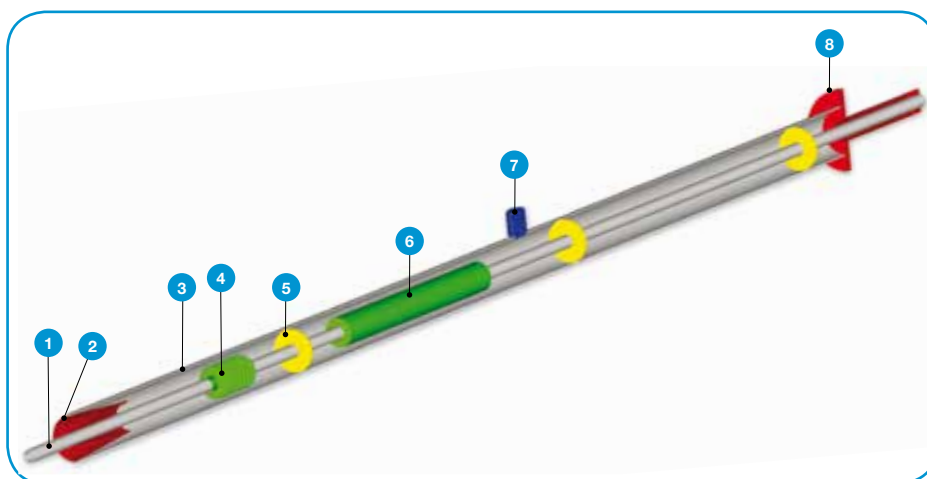
Uses

- > Cryobiology (health, pharmaceutical products...)
- > Chemistry
- > Electronics (semi-conductors...)
- > Foodstuffs
- > Spatial (Ariane 4 and Ariane 5 cryogenic supply)
- > Industry, steel industry...

Technical solutions

- > Flexible or rigid lines
- > Passing diameters: from DN10 to DN100
- > Service pressure: from PN6 to PN20
- > Soldered or screwed connections (Johnston connections)
- > Accessories: purger, phase separator, valves, hoses...

Description of a Vacuum Line



- 1 Interior tube
- 2 Thermal strip
- 3 Exterior tube
- 4 Compensation bellows (compensator)
- 5 Centering device
- 6 Absorbent box
- 7 Vacuum pumping and safety valve
- 8 Male Johnston connection

Rigid Vacuum Line		DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 80	DN 100
FEATURES										
Interior diameter of interior tube	mm	14	-	23.7	30.5	39.2	45.1	57.1	85.7	112.3
Exterior diameter of exterior tube	mm	60.3	-	76.1	88.9	88.9	114.3	114.3	139.7	168.3
Performances	W/m	0.38	-	0.53	0.62	0.73	0.85	1	1.4	1.75
Weight	Kg/m	2.9	-	4.2	5	5.5	7.25	8.5	11.5	15

Flexible Vacuum Line		DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 80	DN 100
FEATURES										
Interior diameter of interior tube	mm	14	18.1	23.7	30.5	39.2	45.1	57.1	-	-
Exterior diameter of exterior tube	mm	68	68	84	103	103	130	130	-	-
Performances	W/m	0.6	0.7	0.85	1	1.2	1.2	1.6	-	-
Weight	Kg/m	1.2	2.5	3.7	4.2	4.8	8.5	9.2	-	-

Vacuum line CO₂

- > Simplified version of standard versions
- > Rigid lines only
- > PN25
- > Available diameters: DN10 to 50 ; other diameters: on request

Connections and couplings

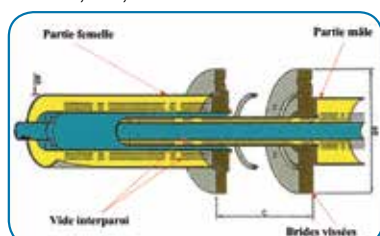
Equipment and accessories

Johnston connection (vacuum)

Assembly without soldering, assembly and dis-assembly is rapidly done by fitting (fixing by screws, collar or claws).

Continuity of thermal performance is guaranteed.

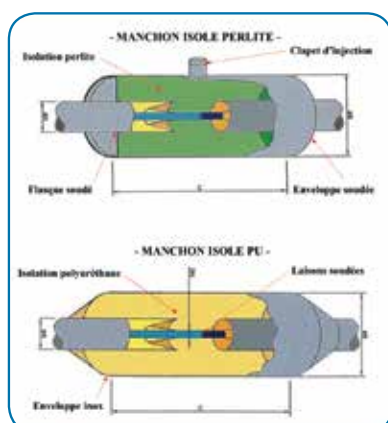
Available in DN10, 20, 32 & 50.



Soldered connections

Available in DN10 to 100.

- > PERLITE & PU sleeve: assembly of sections by soldering on site (BW). Possibility of adjusting the lengths during installation. Filling with PERLITE (Oxygen) or injection of polyurethane foam (Nitrogen and Argon).
- > Vacuum sleeve: assembly of sections and sleeve by soldering on site (BW). Possibility of adjusting the lengths during installation. Superinsulation and vacuum of sleeve on site. Continuity of thermal performance is guaranteed.



Gas purger

- > Remove gas formed in the distribution line.
- > Keep the line cold
- > Exists as insulated vacuum



Insulated valve under vacuum

- > Manual or electropneumatic command
- > D10, 20 and 32 (other on request)



Distribution kit

- > Can connect from 1 to 4 applications. Is mounted at the extremity of the vacuum line
- > From 1 to 4 channels



Vacuum Hoses (cf p. 61)

- > Compatible with liquid nitrogen and liquid argon
- > Available for sale and rental
- > DN10, 20 and 32 - PN10
- > Different lengths : from 2 to 20 m depending on DN
- > Coupling by nozzles to be soldered (BW)
- > Hoses reinforced by protective spiral

EXPERTISE

Monitoring systems for cryopreservation vessels

> CRYOMEMO

> T° TRACKER



Our electronic system for biological banks and support laboratories can provide fully compliant and reliable solutions for your fragile and valuable products (equipment, accessories and services).

Class I medical device



Main functions

■ Automatic level regulation

- Piloted by a solenoid valve

■ Measurements

- Level of liquid nitrogen by a capacitive level probe, and display of quantity of available liquid.
- Temperature by two electronic PT 100 probes, and displayed to digital screen

■ Backlit display

- Of nitrogen level
- Of temperature
- Of potential sound indications

■ Programming of settings

- Possibility of changing settings (T°, level, sound indications)

- Continuous monitoring of temperature and level of liquid nitrogen, with both visual and audible alarms
- Secured system for safe filling and anti over-flow
- Monitoring system for one or several cryopreservers
- Automated optimization of filling





Data logger mobile device
Real-time display for temperature levels
between -200°C and +50°C

Flexibility of fixing
on all our containers



The **T° TRACKER** case is an independent recording system (battery) that ensures the traceability of temperature during the transport of your samples. Fitted with a visual programmable indication, it measures at regular intervals the interior temperature of a container thanks to a PT 100 probe. It also can export data via a USB connexion port.
Available for the GT, ARPEGE, ESPACE, RCB and VOYAGEUR ranges.

6 reasons to use
T° TRACKER

- A wide temperature range:**
- Measures and displays the temperature in °C and °F. The case includes a programmable sound and visual temperature alarm.
- Large memory capacity:**
- Up to 14 years of recording.
- Instantaneous reading of indications such as:**
- Temperature alarm,
 - Temperature probe fault,
 - Saturation of memory,
 - Low battery level,
 - Calibration reminder.

- A single product for mobile or fixed traceability:**
- Works with either 3 AAA batteries for holding of 15 months (replaceable at their end of validity) or with a mains socket.
- Flexibility of fixing on all supports:**
- Small size and multiple fixing modes : the T° TRACKER can be screwed, riveted or scratched, enabling you to adapt it to all your supports.
- The guarantee of a reliable product:**
- Display of prevention alarm for factory calibration,
 - Issuing of a calibration certificate.

PRODUCTS REFERENCES	
T° TRACKER	TRACKER-1
Temperature probe	ACC-TRACKER-1
T° TRACKER Kit accessories (scratch, hook, probe sleeve, collar)	ACC-TRACKER-2
T° TRACKER Kit supply (USB cable, supply)	ACC-TRACKER-3
T° TRACKER Kit support	ACC-TRACKER-4

KNOW-HOW

Ensure safety

- > Identify risks
- > Burns through projection or contact
- > Individual Protective Equipment (IPE)



Ensure safety

Handling cryogenic fluids, and in particular liquid nitrogen (-196°C), requires compliance with strict rules. These are intended to prevent two essential risks: anoxia and burning by contact or projection.

Anoxia

Oxygen is essential to maintain life. It is vital to ensure that it exists in adequate proportions in the atmosphere one breathes. In particular anoxia, caused by under oxygenation, has real risks.



The body reacts very differently to under-oxygenation of the atmosphere from one



person to another. Also, our senses are not able to detect it, victims generally do not notice the



risk they are exposed to and can even have a feeling of well-being.

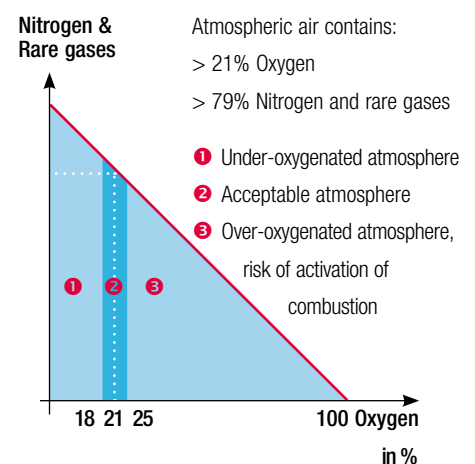
Cause of anoxia: a lack of oxygen in the air

The air that we breathe is made up of 21% oxygen, 79% nitrogen and rare gases.

At atmospheric pressure, liquid nitrogen vaporizes above -196°C .

This increases the level of nitrogen in the air, particularly in a cryogenic room, and with certain handling related to products stored or the use of containers. In fact, this handling causes vaporization of liquid nitrogen.

At atmospheric pressure, 1 litre of liquid nitrogen heated up to ambient temperature generates 691 litres of gas.





Detect under-oxygenation **WARNING !**

Most gases used in cryogenic applications are non-detectable directly by humans.

Choice of measurement method:

When one works in facilities where the oxygen concentration can change dangerously during work, a continuous measurement method must be used.

Discontinuous measurements can only be used if the time elapsed between two analyses is such that the tendency for a dangerous change of oxygen concentration can be detected in time.

Prevention of anoxia: a few precautions

A small amount of liquid causes the formation of a large quantity of gas.

Consequently, liquid leaks can rapidly cause under-oxygenation of the atmosphere in enclosed spaces.

Liquid and cold gases should therefore be removed appropriately:

do not dispose of them in any place where their build up could be dangerous, ventilate storage and usage areas.

Note: if the room is not sufficiently ventilated, respiratory equipment must be used.



Control risks: TRAIN

Working in good conditions with liquid nitrogen implies knowing the risks and knowing how to prevent hazards.

Lots of training in the safe use of liquid nitrogen and implementation equipment are proposed by Air Liquide Santé.

This can be done by e-Learning, in the laboratory with a trainer or in a specially equipped training centre.

For further information:

www.airliquidehealthcare.fr

Burns through projection or contact

Burns by contact or projection

Handling products stored in liquid nitrogen or using cryogenic fluids (therefore at very low temperature) causes the risk of cryogenic burns.



This can have serious consequences, particularly when it involves the eyes or face.

It is imperative to protect against 2 types of burn: by **projection** and/or by **contact**.

Use only for liquid nitrogen



Warning

Low temperature



www.cryopal.com/en/user-manual

Mandatory

Read the instruction leaflet



Mandatory

Protect your hands with appropriate individual protection equipment



Mandatory

Protect your face with appropriate individual protection equipment



Mandatory

Keep the device in a continuously well-ventilated area



Forbidden

Do not touch parts that have been in contact with liquid nitrogen

Individual Protective Equipment (IPE)

Preventing and reducing risks during cryogenic equipment handling



Gloves in conformity with safety rules within Air Liquide group

Wearing safety glasses or a protective visor, gloves and appropriate clothing is essential.

The portable oxygenometer is a way of detecting a low oxygen level.

Protective equipment

		References
A :	Protective visor	ACC-SECU-1
B :	Protective glasses	ACC-SECU-2
C1 :	Cryogenic gloves	Size 8 ACC-SECU-15 Size 9 ACC-SECU-16 Size 10 ACC-SECU-17 Size 11 ACC-SECU-18
C2 :	GANEO cryogenic gloves	Size 8 GANEO-8 Size 9 GANEO-9 Size 10 GANEO-10 Size 11 GANEO-11
D :	Gaiters	Size M (38-42) ¹⁾ ACC-SECU-12 Size L (42-46) ²⁾ ACC-SECU-13
E :	Portable oxygen detector	BW Clip ACC-SECU-26
F :	Apron	One size ACC-SECU-19

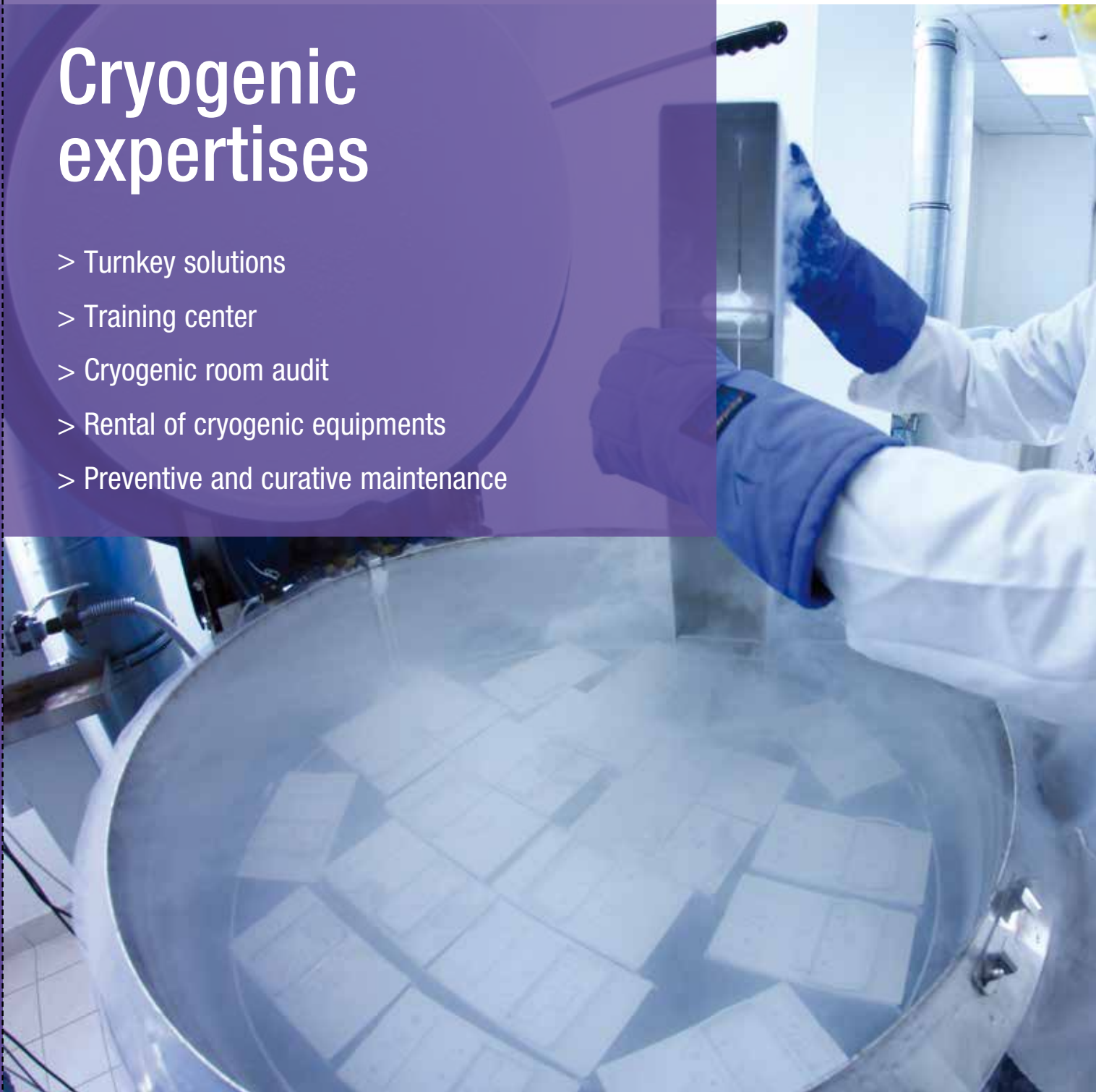
1) M = calf diameter 46.5 up to 48.5 cm
2) L = calf diameter 47.5 up to 49.5 cm

- ⚠ Prescription glasses are not protection.
- ⚠ Cold objects must never be handled nor touched with bare hands.
- ⚠ Hands (even if they are protected) must under no circumstances be immersed in a cryogenic fluid.

SERVICES

Cryogenic expertises

- > Turnkey solutions
- > Training center
- > Cryogenic room audit
- > Rental of cryogenic equipments
- > Preventive and curative maintenance



Cryopal offers «turnkey» solutions from conceptual design, manufacturing and installation of your equipments (containers and pipelines).

Our values

- Research and technology
- Expertise and innovation
- Reliability and quality

Field of expertise and know-how

- Ensuring the safety of people and property
- Consulting and decision-making support in equipment and service options
- Engineering Supports
- Risk analysis
- Installation & operational qualifications (IQ,OQ,PQ)

Geographical and sector diversification

- Cryobiologie : healthcare, pharmaceutical industry, cryogenic room
- Chemical
- Electronic : semi-conductor
- Space : Ariane 4 and Ariane 5 cryogenic supplies
- Cryogenic food
- Industrials, steel industry...



Training center

Our training center is equipped with technical rooms for hands-on learning based in Cryopal. Our trainings combine theory and practice and are managed by our team of experts who are at your disposal to determine your goals to meet your needs.

Training Offer

- Courses on products handling, room operations, maintenance, safety
- Customized specific training and table-top exercises

Field of expertise and know-how

- Performing different types of training according to the need : we make sure that the courses are worked out in coherence with the skill level of the people
- A tailored personal learning plan learning is in place for development, acquisition and maintenance of your professional skills
- Our training center is recognized by the French state for its professionalism (No. 11770510077)



Cryogenic room audit

Cryopal accompanies you through customized specific audits (evaluation, investigation, controls processes).

SERVICES

Our target

- Anticipate risks
- Identify equipment needs and associated services
- Provide ongoing support
- Quality and reliability required to ensure and guarantee the solution's durability and its ability to evolve

Field of expertise and know-how

- Ensuring the safety of people and property
- Performing different types of training according to your needs

To obtain certification

- Our experts are with you every step of the way : from initial analysis and planning, through implementation and testing

Our offer

- Counselling, support and follow-up services to ensure the arrangement of the cryo-room and equipment settings are within the framework of your quality process



Rental of cryogenic equipments

If your needs are temporary, rented equipment could be the solution.
Whatever your challenges or fleet size, we provide you with the best leasing solutions.

Loan Offer

Ensure continuity of service when necessary is our priority. That's why our teams are at your disposal to define the need and approach for remediation:

- Large range of equipments
- Long-term rental possible
- Transport and logistics management
- Equipment installation on site
- Implementation and start-up by our experts
- Equipment qualification
- Training for equipment and installation



Preventive and curative maintenance

Our technical team is on hand to advise you and give you detailed answers to your questions. Our technicians are at your disposal to ensure optimal usage and management of your equipment.

We provide product support by guaranteeing performance and programming preventive maintenance.

SERVICES

Our offer to answer your needs

- On-site technical support or in our maintenance workshop
- Provision of original spare parts
- Phone and e-mail assistance for analysis, diagnosis, troubleshooting and on-site support
- Regulatory maintenance framework

Field of expertise and know-how

- Trained and empowered, our team of technical experts provides equipment maintenance in accordance with the requirements of medical device (directive 93/42/EEC), while relying on an ISO 13485 quality system.



General equipment sales conditions

1. INTRODUCTION

The formation of a sales contract implies the acceptance of these general conditions by the Purchaser except for specific conditions indicated in the introduction of the Vendor's proposal or accepted in writing by the Vendor.

2. PRICE

- 2.1. A proposal only commits the Vendor for the indicated period of validity. In the absence of any indication of duration, the proposal will only be valid for one month from the date of issue.
- 2.2. For supplies outside of a specific quote, the prices invoiced are the current catalogue prices at the date of ordering. The prices indicated in the catalogues are excluding tax, from the factory and packaged goods. The Vendor reserves the right to modify these at any time.
- 2.3. Information in the catalogues and prospectus do not commit the Vendor, who has the right to make any changes to these.

3. PAYMENT CONDITIONS

- 3.1. The price of the supply is payable net, and without discount, by bank transfer to the Vendor's account stipulated on the invoice.
- 3.2. Payment within 30 days from end of billing month, on the 10th of the subsequent month.
- 3.3. Invoicing:
 - For a factory delivery time less than 3 months: 100% of the amount will be invoiced, on a prorata basis of deliveries, on the date of provision for the Purchaser in the Vendor's factories.
 - For a factory delivery time over 3 months: 30% deposit will be invoiced upon receipt of the order by the Vendor. 70% of the amount will be invoiced, on a prorata basis of deliveries, on the date of provision to the Purchaser in the Vendor's factories.
- 3.4. In enforcement of article L-441-6 paragraph 12 of the Commercial Code, any late payment gives full right, from the first day following the date of payment shown on the invoice:
 - To late penalties at a rate equal to 1.5 times the legal rate of interest; Compensation for collection, as outlined by article D-441-5 of the Commercial Code. This compensation, on 1st January, was an amount of 40 Euro. In the event of payment default, the Vendor reserves the right to suspend or cancel the delivery of current or future orders.
- 3.5. The amount on invoices will be increased by applicable taxes on the date of delivery. Any change to the tax system directly or indirectly affecting the Vendor's products will cause a corresponding change to invoicing.

4. TRANSFER OF PROPERTY AND RISKS

- 4.1. The equipment sold remains the property of the Vendor until full payment of the price and cannot in the meantime be the subject of any security or pledge.
- 4.2. Nevertheless, except where there is a specific agreement, the risks weighing on equipment sold are transferred to the Purchaser when they leave the factory or warehouse of the Vendor. The Purchaser who is the holder of the unpaid equipment will personally be responsible for all risks. In the event of the disappearance or destruction of equipment, he/she will remain debtor at an agreed price.
- 4.3. A claim by the Vendor for unpaid equipment will legally result in the resolution of the sale. All recovery costs, such as, in particular, return costs or repair costs will be supported by the Purchaser, without affecting the rights of the Vendor owing to the cancellation of the sale.
- 4.4. Tests and documents of any type given or sent to the Purchaser by the Vendor prior to the placing of an order on a quote remain the full property of the latter. They must be returned upon request. The Vendor reserves intellectual property rights for projects given to the Purchaser, who cannot disclose the content of these or perform them without prior written approval from the Vendor.

5. DELIVERY

- 5.1. Except where there is a specific agreement, delivery occurs by provision in factories or warehouses of the Vendor.
- 5.2. Except where there is express stipulation from the Vendor in its order confirmation, delivery times are given for information purposes and (i) no compensation for late delivery can be claimed to the Vendor and (ii) the Purchaser cannot avail of this delay to defer payment for its order. If the sale composes of successive deliveries, the delay cannot result in the cancellation of the order. The Vendor is in all circumstances relieved of any obligation with respect to delivery times: a) in the case where the conditions and terms of payment have not been observed by the Purchaser; b) in the case where the information relating to the Purchaser and necessary for the delivery are not arrived at the desired time; c) in the case of force majeure outlined below.
- 5.3. If the dispatch is delayed for a cause not attributable to the Vendor, the equipment could be put into store and handled, if applicable and if the Vendor accepts it, at the costs and risks of the Purchaser, the Vendor declining any responsibility in this respect. These conditions do not in any way modify the obligations of the Purchaser and do not constitute a novation.

6. GUARANTEE

- 6.1. The Vendor guarantees the Purchaser against any fault in material, manufacture or construction affecting the equipment delivered. This guarantee does not apply to consumable materials. It will immediately cease in the event of replacement or repair of replacement parts by individuals not appointed by the Vendor. Repairs, modifications or replacements needed as a result of normal wear, deterioration resulting from use not compliant with the usage recommendations (see technical usage leaflets) or negligence, as well as degradation due to bad weather, are not covered by the guarantee. The guarantee is conditional on the total payment of the price of the equipment guaranteed according to contractual deadlines.
- 6.2. The receipt of equipment by the Purchaser discards any claim from its part with respect to the conformity of the delivery at the order or with respect to any obvious defects, except for condition notified by registered letter within three days of the date of receipt mentioned, as per the conditions of sale, either upon notice of dispatch or upon discharge given to carriers.
- 6.3. The Vendor guarantees the Purchaser against any hidden defects which come to light over a period of one year from the date of receipt.
- 6.4. The guarantee of the Vendor is strictly limited, at the choice of the Vendor, to the repair or replacement of parts which it recognizes to be faulty and at the costs of labour excluding transport and packaging costs. Travel and stay costs for agents or representatives of the Vendor are the responsibility of the Purchaser in the event of repair in the installation area, in accordance with its current tariffs.
- 6.5. Replaced defective parts become the property of the Vendor.
- 6.6. The repair, modification or replacement of parts during the guarantee period cannot have the effect of prolonging the duration of the guarantee (subject to the applicability of the conditions of article L.211-16 of the Consumer Code).
- 6.7. To avail of the guarantee, the Purchaser should present to the Vendor, at the address mentioned on the invoice and within 15 days following the noticing of the defect, any document attesting the date of purchase or delivery of the applicable equipment and establishing the existence and type of the fault.
- 6.8. The Vendor also remains responsible for conformity faults for the good at the contract and crippling defects, in the conditions outlined in articles 1641 to 1649 of the Civil Code.

General equipment sales conditions

7. RESPONSIBILITY AND ASSURANCES

- 7.1. Responsibility: the responsibility of the Vendor is strictly limited to the commitments outlined in the context of this document. In all circumstances, the responsibility of the Vendor cannot be sought when there is a:
- fault, negligence, omission or failure of the Purchaser, use of equipment that is the subject of this document with non respect of the instructions...
 - event independent of the wish of the Vendor as specified in article 8 hereafter,
 - fault, negligence or omission of a third party for which the Vendor has no control over. To the extent where the Purchaser demonstrates that it has been the subject of a loss by the Vendor, the Vendor is only responsible for the sole repair for direct material damage limited to the price of the equipment sold affected by the damage. For any claim of third party and any amount above the amount of the order, the Purchaser renounces any recourse to the Vendor, its employees, its companies affiliated to it, its successors or agents, and its insurers and will obtain renunciation from its insurers for equivalent recourse. It is expressly agreed that the Vendor does not respond in any circumstances for indirect or immaterial damage of any type particularly the loss of use or profit, the loss of cryogenic fluid, stored products etc. finding their origin or being the consequence of this.
- 7.2. Insurance: the Vendor confirms that it is the holder of an insurance policy with a solvent company, covering it against the financial consequences of civil responsibility that could be incumbent on it in the execution of its obligations and which could be the result of physical or material damage described that the Vendor could cause. The Purchaser agrees, with respect to its staff and everything at its premises or under its control for which the equipment is part of to have public liability insurance. The Parties each have their own insurance covering their respective goods. Damage of any type caused to the staff of each Party due to the equipment that is the subject of this remains the responsibility of their respective employer. These conditions do not affect the rights or actions which could legally prevail the victims of accidents or their eligible parties or Social Security.

8. FORCE MAJEURE

- 8.1. The Vendor's obligations are suspended by the occurrence of any event independent of its wish and that of its sub-contractors, preventing all or part of the aforesaid obligations from being accomplished (such as, in particular: fire, explosion, requisition, flood, machine breakdown, essential supply difficulties, scrapping of important parts during manufacture, motive force fault, computer virus, interruption or delay in transport, strikes etc.) during the duration of such an event and to the extent of its effects.
- 8.2. In all circumstances, the Vendor will take the necessary steps to inform the Purchaser and to ensure normal resumption of satisfying its contractual obligations affected by the case of force majeure as soon as possible.
- 8.3. If as a result of a case of force majeure the Vendor is unable to satisfy its obligations for a consecutive period of six months, the parties will negotiate in good faith equitable conditions for the continuation of the fulfilment of the order. If it is decided to end the contract, the Vendor shall receive fair compensation from the Purchaser.

9. TERMINATION

- 9.1. Should the Purchaser fail to fulfil its contractual obligations, the Vendor reserves the right to terminate the contract, without any compensation being claimed by it, 15 days after notification by registered letter with proof of receipt remained without effect.
- 9.2. The Vendor, unless the legal administrator or liquidator decide not to continue with the order, reserves the right to terminate the order in the case of legal ruling, temporary suspension of actions or liquidation of the Purchaser's assets, the sums paid as a deposit remaining acquitted to the Vendor.

10. DISPUTES

In the event of a dispute regarding an order or its payment, the Commercial Tribunal in MEAUX is solely competent, irrespective of the conditions of sale and the accepted payment method, even in the case of calling of guarantee or plurality of defenders, and French law shall be solely applicable.

11. ADDITIONAL OBLIGATIONS OF THE PURCHASER

In the context of regulation regarding equipment vigilance and CE marking for medical devices, the Purchaser agrees to implement (or have implemented) the stipulations of European Directive 93/42/CEE, in particular in terms of traceability of materials, the recording and declaration of anomalies of functioning, documentation control and training of technical people. For any equipment with software, the Purchaser agrees, before any installation, to take the necessary precautions in terms of backup and control of the support (virus); in the absence of these precautions, the Vendor will not be held responsible for damage of any sort. It is forbidden to copy or reproduce all or part of software products by any method whatsoever and in any form.

LEGAL WORDING

Legal wording intended for the Purchasers acting as a consumer in the context of article L.211-3 of the Consumer Code: • Article 1641 of the civil code: the vendor is bound by the guarantee because of hidden faults in the item sold which make it inappropriate for the use for which it was intended or reduces such usage that the purchaser would not have acquired it, or would not have given at any price, had it been aware of it. • Article 1648 al. 1 of civil code: the action resulting from crippling defects must be instituted by the buyer within two years from the discovery of the defect. • Article L. 211-4 of the consumer code: the vendor is bound to supply a good that is compliant with the contract and respond to conformity defects existing when supplied. It also responds to conformity defects resulting from the packaging, assembly instructions or installation instructions when this has been placed under its responsibility by the contract or was performed under its responsibility. • Article L 211-5 of the consumer code. To be compliant with the contract, the good must:

- 1° Be appropriate for the usually expected use of a similar good, and, if applicable:
 - correspond to the description given by the vendor and have the qualities which it presented to the purchaser in the form of a sample or model;
 - have the qualities that a purchaser can legitimately expect with respect to public declarations made by the vendor, by the manufacturer or by its representative, particularly in advertising or labelling;
- 2° Or have the characteristics defined by common agreement by the parties or be appropriate for any special use sought by the purchaser, brought to the knowledge of the vendor and which was accepted by the latter.

• Article L. 211- 12 of the consumer code: the action resulting from a conformity defect lapses two years from the supply of the good

Regulatory Information

1) Medical Devices :

Products identified within the catalogue as medical devices - except for straws, visotubes, cryo-vials, bags and goblets for which Cryopal is not the manufacturer - are regulated health products manufactured by CryopAL with CE marking in the context of directive 93/42/CEE.

Notified body: LNE -  0459

Classification: depending on the product.



Manufacturer

CRYOPAL (Groupe Air Liquide)

Parc Gustave Eiffel

8, avenue Gutenberg

77607 Marne-la-Vallée

France



For proper use of equipment we suggest you refer to the instructions in the users manuals.

Carefully read operating instructions before use.

Instructions for use are available on Cryopal website (<http://www.cryopal.com>) - instructions for use provided in paper format within 7 calendar days.

2) Equipment vigilance :

With ISO 13485 certification (version 2012), Cryopal has implemented a specific organisation for the monitoring of incidents related to the use of Medical Devices and their traceability.

In the context of the enforcement of the Public Health Code for Medical Devices and equipment vigilance (Article R 5212-1, article R 5212-16), the manufacturer, the user or any third party are obliged to inform the supervisory authority of any incident or risk of incident implicating the Medical Device.

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