

MVE Biological Systems

Chart-MVE is the world's leading manufacturer of vacuum insulated products and cryogenic systems. More than thirty years ago, we set the standard for storage of biological materials at low temperatures. Today, we continue to exceed these standards. Industries, from around the world, look to Chart-MVE for excellence and innovation. Our solutions empower industries to better utilize cryogenic technology. In this manner, Chart-MVE continues to make a vital contribution to the successes of today's biomedical industry.

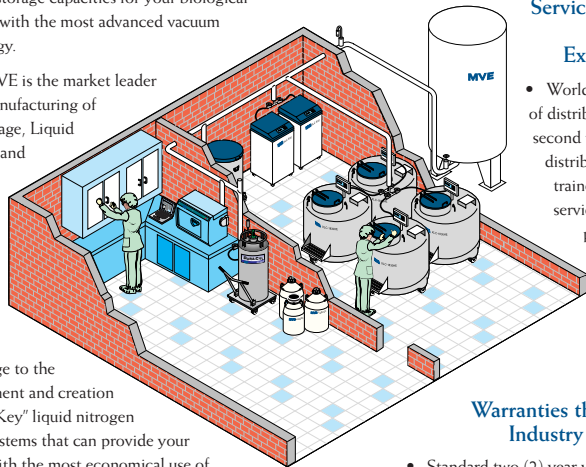
Chart-MVE has the solution for all of your cryogenic storage needs. We offer the broadest range of storage capacities for your biological products with the most advanced vacuum technology.

Chart-MVE is the market leader in the manufacturing of Bulk Storage, Liquid Cylinder and Vacuum Insulated Pipe products. Chart-MVE applied this knowledge to the development and creation of "Turn Key" liquid nitrogen supply systems that can provide your freezer with the most economical use of liquid nitrogen and the best return on your storage investment.

Every Chart-MVE freezer is designed for optimum vacuum performance for the duration of its use. Chart-MVE freezers are engineered to hold and maintain specific temperatures whether

samples are in liquid or vapor. Chart-MVE has the widest range of storage capacities and storage options (from -125° to -196°C) for your biological product needs.

By choosing Chart-MVE, you are installing a secure and viable environment, free of the noise and heat created by mechanical refrigeration systems. Chart-MVE products meet worldwide standards of excellence such as CE, MDD, UL, IATA, and ISO 9001. Chart-MVE vessels are factory tested to ensure reliability in the field and are backed by the strongest and longest warranty in the industry.



Service to Match Your Expectations.

- Worldwide network of distributors who are second to none. Each distributor is factory trained in sales and service designed to provide you the expertise and assistance you need and deserve.

Warranties that Surpass Industry Standards.

- Standard two (2) year warranty on all equipment (parts and labor).
- Three (3) year vacuum warranty on CryoSystem Series and Vapor Shippers.
- Five (5) year vacuum warranty on Stainless Steel Freezers and XC/SC Aluminum Units.

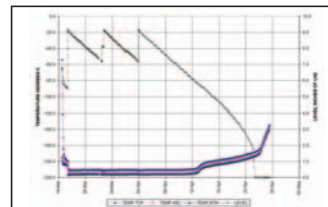
MVE Eterne/HE Series



There is a critical temperature for most biological samples that are cryopreserved. Known as the Glass Transition Temperature (T_g), this is widely accepted as being in the order of -130 to -135°C. The long term viability of frozen samples can be seriously compromised if stored above this temperature. Further, if they experience several transitions through the temperature, in either thermal direction additional deterioration may occur. It is important that the LN₂ freezer maintain a lower temperature, even during filling and sample retrieval cycles. This is much more likely to be achieved if the freezer maintains -190°C than if the system is at or near the critical temperature at normal equilibrium. Chart-MVE's approach to this problem was to improve the fundamental design of freezers used in vapor phase and to design and build a nitrogen vapor freezer which addresses the previous issues associated with storage in vapor.

PRODUCT SPECIFICATIONS

	MVE 810	MVE1520	MVE1830	Blood Bag Capacities				
	Eterne/HE Series	Eterne/HE Series	Eterne/HE Series	Unit Capacities	Frame Ht	Bags/Frame	No Frames	Total Bags
				MVE 810 Eterne/HE	(in/mm)			
UNIT DIMENSIONS				4R9951	25.5 / 648	6	111	666
LN ₂ Capacity (Liters)	370	756	1672	4R9953	26 / 661	4	95	380
LN ₂ Capacity Under Platform (L)	52	133	296	4R9955	26 / 661	4	68	272
Neck Opening (In/mm)	12.5 / 317	17.5 / 444.5	25 / 635	MVE1520 Eterne/HE				
Useable Internal Height (In/ mm)	27.5 / 698	28.6 / 726.4	28.6 / 726.4	4R9951	25.5 / 648	6	248	1,488
Inner Diameter (In/mm)	28.7 / 729	38.5 / 977.9	56 / 1422.4	4R9953	26 / 661	4	190	760
Overall Height (In/mm)	47.3 / 1202	53.2 / 1351	63.3 / 1608	4R9955	26 / 661	4	180	720
Outer Diameter (In/mm)	32 / 812.8	42 / 1066.8	60 / 1524	MVE 1830 Eterne/HE				
Weight Empty (Lbs/Kg)	475 / 216	750 / 341	1500 / 681	4R9951	25.5 / 648	6	480	2,880
UNIT CAPACITIES - VIALS				4R9953	26 / 661	4	390	1,560
1.2 & 2 ml Vials (Internally Threaded)				4R9955	26 / 661	4	276	1,104
Number of Racks (100 cell boxes)	12	24	54	MedSep 810 Eterne/HE	23.3/593	6	140	840
Number of Racks (25 cell boxes)	4	12	30	MedSep 810 HE+	30.9/784	8	140	1120
Number of Stages per Rack	12	13	13	MedSep 1520 Eterne/HE	27.1/688	7	428	2996
Total Vial Capacity	15,600	38,800	79,950	MedSep 1520 HE+	30.9/784	8	428	3424
				MedSep 1830 Eterne/HE	27.1/688	7	828	5796
				MedSep 1830 HE+	30.9/784	8	828	6624



TWO Year Standard Warranty
FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

MVE 600 / 1400 Series



The MVE 600 and 1400 Cryo-Preservation Systems are designed to provide reliable storage of biological products in liquid or vapor. New design with improved ergonomics and easier sample access, all aluminum cabinet and lid with stainless steel top deck. With vial storage capacities ranging from 16,900 to 26,650, combined with our low maintenance design, industry leading warranty, and the TEC 2000 electronics the MVE 600 and 1400 Series are world class wide neck freezers.

* The MVE 600/1400 Series Freezers are designed primarily for liquid phase storage. If vapor phase storage is required, ask your distributor about the available vapor phase storage accessory package.

PRODUCT SPECIFICATIONS

MODEL	MVE 600	MVE1400
MAXIMUM STORAGE CAPACITY		
Number of 1.2 & 2.0 ml vials in racks (13/2)	16,900	26,650
Number of racks (100 vials)	12	18
Number of racks (25 vials)	4	10
Total number of racks	16	28
No of Blood Bags Stored (Fenwal 4R-9953)	352	512
PERFORMANCE		
Liquid nitrogen capacity (liters)	236	375
Power supply	24 VDC	24 VDC
UNIT DIMENSIONS		
Neck opening (in/mm)	25.13 / 638	31.75 / 806
Usable height (in/mm)	29.06 / 738	28.9 / 735
Overall height (in/mm)	40.38 / 1026	40.38 / 1026
Outside dimensions (in/mm)	28x35.13 / 711x892	34.75x41.13 / 882x1044
Internal diameter (in/mm)	25.13 / 638	31.75 / 806
Weight empty (lbs/kg)	330 / 150	530 / 240
Weight full (lbs/kg) w/LN2	751 / 341	1198 / 543

TWO Year Standard Warranty
FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

MVE Series



MVE Cryo-Preservation Systems are designed for the user requiring either vapor or liquid storage. A wide neck opening and stainless steel construction provides the most durable environment for your biological samples. With advanced features and storage from 3,200 to 39,000 vials, the MVE series is the choice of laboratories worldwide.

* The MVE 611, & 1411 Series freezers are designed primarily for liquid phase storage. If vapor phase storage is required, ask your distributor about the vapor storage accessory package.

PRODUCT SPECIFICATIONS

MODEL	MVE 230*	MVE 230II	MVE 511	MVE 611	MVE 1411	MVE 1841
MAXIMUM STORAGE CAPACITY						
Number of 1.2 & 2.0 ml vials in racks	3200	5200	10,400	16,900	26,650	39,000
Number of racks (100 vials)	4(8/2 rack)	4 (13/2 rack)	7 (13/2 rack)	12(13/2 rack)	18 (13/2 rack)	28 (13/2 rack)
Number of racks (25 vials)	-	-	4 (13/2 rack)	4 (13/2 rack)	10 (13/2 rack)	8 (13/2 rack)
Total number of racks	4	4	11	16	28	36
Number of blood bags stored (Fenwal 4R-9953)	-	132	224	352	512	980
PERFORMANCE						
Liquid nitrogen capacity (liters)	63	89	158	236	375	669
Power supply	-	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
UNIT DIMENSIONS						
Neck opening (in/mm)	16.1 / 408	16.0 / 408	20.8 / 528	25.13 / 638	31.75 / 806	39.5 / 1003
Usable height (in/mm)	19.38 / 492	28.9 / 735	298 / 756	29.81 / 757	28.7 / 726	33.3 / 846
Overall height (in/mm)	30.25 / 768	45.25 / 1150	44 / 1118	40.69 / 1033	40.69 / 1034	48 / 1219
Outside diameter (in/mm)	18 / 457	18.0 / 457	22.75 / 579	27.38 / 695	33.75 / 857	42 / 1067
Internal diameter (in/mm)	16.1 / 408	16.0 / 408	20.8 / 528	25.13 / 638	31.75 / 806	39.5 / 1003
Weight empty (lbs/kg)	79 / 36	125 / 57	228 / 103.6	283 / 128	530 / 240	675 / 306
Weight full (lbs/kg)	191 / 87	283 / 129	511 / 232.3	704 / 319	1198 / 543	1867 / 847

*Number of SUC-1 Canisters is 22

TWO Year Standard Warranty
FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.



MVE Stock Series



MVE Stock Series tanks are primarily designed for storage of either vials/straws on canes in liquid nitrogen. In addition to a build intended for long life and durability in service, the ergonomics of sample retrieval is of vital importance in this type of storage environment. Dual lids on the MVE 1370 aid in sample removal while retaining critical temperatures inside the storage area. The rotating sample tray in the 1830 allows for maximized storage space and easy access. All MVE Stock units are built with the emphasis on sample security and the ability to provide safe long-term storage for your most valuable samples.

PRODUCT SPECIFICATIONS

MODEL	MVE 140	MVE 810	MVE 1370	MVE 1830	MVE 18302T
MAXIMUM STORAGE CAPACITY					
Number of 1.2 & 2.0 ml vials in racks	-	11,700	20,800	-	-
Number of racks (100 vials)	-	12 (9/2 rack)	24 (8/2 rack)	-	-
Number of racks (25 vials)	-	4 (9/2 rack)	8 (8/2 rack)	-	-
Total number of racks	-	16	32	-	-
Number of blood bags stored (Fenwal 4R-5461)	-	N/A	N/A	N/A	N/A
Number of SUC-1 canisters (2.5" x 2.5" x 11")	22	61	129	300	561
Number of 1.2 & 2.0 ml vials on canes	3696	11,346	23,994	55,800	104,346
Number of 1/2 cc straws (10/cane)	6820	18,910	39,990	93,000	173,910
PERFORMANCE					
Liquid nitrogen capacity (liters)	39	230	482	860	1400
Power supply	-	24 VDC	24 VDC	24 VDC	24 VDC
UNIT DIMENSIONS					
Neck Opening (in/mm)	16.0 / 406	25 / 635	35.5 / 902	25 / 635	25 / 635
Usable height (in/mm)	12.0 / 305	21.4 / 544	19.4 / 492	13 / 330	2x13 / 2x330
Overall height (in/mm)	16.3 / 414	41.5 / 1054	44 / 1118	40.9 / 1039	53.9 / 1368
Outside diameter (in/mm)	18.0 / 457	31 / 787	42 / 1067	60 / 1524	60 / 1528
Internal diameter (in/mm)	16.0 / 406	28.2 / 716	39.5 / 1003	56 / 1422	56 / 1422
Weight empty (lbs/kg)	48 / 22	250 / 114	410 / 186	984 / 447	1184 / 538
Weight full (lbs./kg)	117 / 53	660 / 300	1269 / 577	2517 / 1144	3700 / 1682

FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

Recommended maximum temperatures for storage of biological samples.

MATERIAL TO BE STORED	VOLUME	CONTAINER	INVENTORY CONFIGURATION	CRITICAL TEMPERATURE
Algae	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Bacteria	0.5 - 1.0 ml	Cryovial	Boxes or canes	-80°C
Bacteriophage	0.5 - 1.0 ml	Cryovial/Eppendorf Tube	Boxes or canes	-80°
Blood	0.5 - 500 ml	Cryovial/Blood Bag	Boxes or canes/bag rack	-150°C
Cells:				
Animals/Human	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Plant	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Embryos		Straw	Canes	-150°C
Fungi:				
Mycelium	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Spores	0.5 - 1.0 ml	Cryovial	Boxes or canes	-80°C
Hybridomas	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Nucleic Acids:				
DNA	milli/micro grams	Cryovial/Eppendorf Tube	Boxes	>-20°C
RNA	milli/micro grams	Cryovial/Eppendorf Tube	Boxes	>-20°C
Phage:				
Libraries	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Plasmids	milli/micro grams	Cryovial/Eppendorf Tube	Boxes	-80°C
Proteins			Boxes	>-20°C
Protozoa	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Viruses: Animal				
Cell-Free	0.5 - 1.0 ml	Cryovial	Boxes	-80°C
In Cells	0.5 - 1.0 ml	Cryovial	Boxes or canes	-150°C
Plant	0.5 - 1.0 ml	Cryovial	Boxes	-80°C

Source: F. Simeone, American Type Culture Collection, Manassas, VA



MVE CryoSystem Series



The MVE CryoSystem 750, 2000, 4000 and 6000 combine the benefits of low nitrogen consumption with mid-range vial capacity to meet the diverse needs of today's professionals worldwide. The light weight and low space demands make them the most economical units in their class. Chart-MVE cryogenic vessels are performance leaders through innovation, super insulation and vacuum technology.

PRODUCT SPECIFICATIONS

Model	Cryosystem 750	CryoSystem 2000	CryoSystem 4000	CryoSystem 6000
Maximum Storage Capacity				
Number Of Racks	6	4	4	6
Number of 1.2 & 2.0 ml vials (100/Box)	750	2000	4000	6000
Boxes Per Rack	5 (25 Cell)	5	10	10
Performance				
Liquid nitrogen capacity (liters)	47.4	61	121	175
Static Evaporation Rate (liters/day)	0.39	.85	.99	.99
Working Volume (liters)	47	51	111	165
Normal Working Duration (Days)	76	38	70	104
Unit Dimensions				
Neck opening (in/mm)	5 (127)	8.5 (216)	8.5 (216)	8.5 (216)
Overall height (in/mm)	26.5 (673)	27.5 (690)	37.5 (950)	37.5 (950)
Outside diameter (in/mm)	20 (508)	22 (559)	22 (559)	26 (665)
Weight empty (lbs/kg)	42 (19)	53 (24)	96 (43)	107 (48)

* Static evaporation rate and static holding times are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.

** Normal Working Duration is an arbitrary reference, to estimate container performance under normal operating conditions. Actual working time may vary due to current atmospheric conditions, container history, manufacturing tolerances and any individual patterns of use.

THREE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

MVE Lab Series



The Lab Series cryogenic liquid dewars are named for their acceptance in laboratories and medical facilities worldwide. These high-efficiency, super insulated dewars are the most convenient, economical way to store and dispense liquid nitrogen. Many lab units can be fitted with pouring spouts, pressurized dispensing devices or dippers to aid in the transfer of liquid nitrogen.

PRODUCT SPECIFICATIONS

MODEL	LAB 4	LAB 5	LAB 10	LAB 20	LAB 30	LAB 50	SS Transfer Unit
Net Capacity (liters)	4	5	10	21	32	50	5
PERFORMANCE							
Static Evaporation Rate (liters/day)	0.19	0.15	0.18	0.18	0.22	0.49	N/A
UNIT DIMENSIONS							
Neck opening (in/mm)	1.4 / 35.5	2.2 / 56	2.2 / 56	2 / 51	2.5 / 64	2.5 / 64	6 / 152
Usable height (in/mm)	7.8 / 198	10.5 / 266	13.5 / 343	13.7 / 348	14.9 / 378	22 / 559	14 / 356
Overall height (in/mm)	16.8 / 426	18.2 / 462	21.5 / 546	24.7 / 627	24.1 / 611	30.7 / 779	16.5 / 419
Outside diameter (in/mm)	7.3 / 185	8.8 / 222	10.3 / 260	14.5 / 368	17 / 432	17 / 432	8 / 203
Internal diameter (in/mm)	5.5 / 139	6.5 / 165	8.3 / 210	11.4 / 289	14 / 356	14 / 356	6 / 152
Weight empty (lbs/kg)	6 / 2.7	8 / 4	13 / 6	19 / 9	27 / 12	34 / 15	11 / 5
Weight full (lbs/kg)	13 / 6	17 / 8	31 / 14	56 / 26	84 / 38	123 / 56	20 / 9

FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.



MVE SC Series



MVE offers the widest range of compact aluminum storage tanks available on the market today. Whatever the application, you will find the perfect solution within the XC and SC product lines. Over the past 40 years, our product designs have benefited from end-user input and have evolved into a unique selection of units. Each unit is perfectly designed for various applications.

PRODUCT SPECIFICATIONS

MODEL	SC 3/3	SC 8/5	SC 11/7	SC 16/11	SC Millennium 20	SC 20/20	SC 36/32	SC 33/26
MAX. STORAGE CAPACITY								
Number of canisters	6	6	6	9	6	6	6	6
No. of 1/2 cc straws (10/cane)	-	-	540	-	540	540	540	540
No. of 1/2 cc straws (1 Level Bulk)	732	732	732	1098	780	780	780	780
No. of 1.2 & 2.0 ml vials (5/cane)	-	-	150	-	150	150	150	150
No. of Racks (25 Vials)	-	-	-	-	-	-	-	-
PERFORMANCE								
Liquid nitrogen capacity (liters)	3.6	8.4	11.0	16.4	20.5	20.5	36.5	33
Static evaporation rate (lit/day)*	0.12	0.15	0.15	0.14	.095	0.09	0.10	0.13
Normal Working Duration (days)**	19	35	46	74	135	142	224	182
UNIT DIMENSIONS								
Neck opening (in/mm)	2 / 51	2 / 51	2 / 51	2 / 51	2.18 / 55.4	2 / 51	2 / 51	2 / 51
Overall height (in/mm)	16 / 406	18.5 / 470	21.6 / 549	17.5 / 444	25.7 / 652	25.7 / 652	27.2 / 690	25.9 / 657
Outside diameter (in/mm)	8.7 / 222	10.2 / 260	10.2 / 260	17.2 / 438	14.5 / 368	14.5 / 368	18.2 / 464	18.2 / 464
Canister height (in/mm)	5 / 127	5 / 127	11 / 279	5 / 127	11 / 279	11 / 279	11 / 279	11 / 279
Canister diameter (in/mm)	1.5 / 38	1.5 / 38	1.5 / 38	1.5 / 38	1.5 / 38	1.5 / 38	1.5 / 38	1.5 / 38
Weight empty (lbs/kg)	8 / 3.6	12 / 5.3	17 / 7.7	14 / 6.4	23 / 10.5	26 / 11.8	34 / 15.4	34 / 15.4
Weight full (lbs/kg)	14.4 / 6.5	27 / 12.1	36.6 / 16.6	43 / 19.6	59.5 / 27	62.5 / 28.3	100 / 44.8	93.4 / 42.4

* Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.

** Normal Working Duration is an arbitrary reference, to estimate container performance under normal operating conditions. Actual working time may vary due to current atmospheric conditions, container history, manufacturing tolerances and any individual patterns of use.

MVE XC Series



MVE XC Series tanks have capacities ranging from 700 - 5000 straws and 150 to over 1000 vials. Manufactured to a world class level of excellence and backed by an industry leading 5 year vacuum warranty, these durable, lightweight units can be relied on to perform in the most demanding of environments. The XC Series is designed for the user who requires large capacity storage and low liquid nitrogen consumption in a convenient lightweight package.

PRODUCT SPECIFICATIONS

MODEL	XC Millennium 20	XC 21/6	XC 22/5	XC 32/8	XC 33/22	XC 34/18	XC 43/28	XC47/11-6SQ	XC 47/11-6	XC 47/11-10
MAX. STORAGE CAPACITY										
Number of canisters	6	9	6	9	6	6	6	6 sq.	6	10
No. of 1/2 cc straws (10/cane)	720	N/A	2,400	2,520	1,260	2,100	1,260	-	4,500	3,500
No. of 1/2 cc straws (1 Level Bulk)	1122	3,870	3,666	3,960	1,764	3,000	1,764	-	6,216	5,000
No. of 1.2 & 2.0 ml vials (5/cane)	210	N/A	810	855	360	630	360	-	1,320	1,050
No. of Racks (25 Vials)	-	-	-	-	-	-	-	750	-	-
PERFORMANCE										
Liquid nitrogen capacity (liters)	20.5	21	22.4	32	33.4	34.8	42.2	47.4	47.4	47.4
Static evaporation rate (lit/day)*	.095	0.35	0.35	0.35	0.14	0.18	0.14	0.39	0.39	0.39
Normal Working Duration (days)**	140	53	40	57	154	123	193	76	76	76
UNIT DIMENSIONS										
Neck opening (in/mm)	2.18 / 55.4	3.5 / 89	3.81 / 97	3.81 / 97	2.75 / 70	3.5 / 89	2.75 / 70	5 / 127	5 / 127	5 / 127
Overall height (in/mm)	25.7 / 652	17.2 / 438	22 / 559	21.5 / 546	26 / 660	26.6 / 675	26.4 / 670	26.5 / 673	26.5 / 673	26.5 / 673
Outside diameter (in/mm)	14.5 / 368	18.2 / 464	14.5 / 368	18.2 / 464	18.2 / 464	18.2 / 464	20 / 508	20 / 508	20 / 508	20 / 508
Canister height (in/mm)	11 / 279	5 / 127	11 / 279	11 / 279	11 / 279	11 / 279	11 / 279	-	11 / 279	11 / 279
Canister diameter (in/mm)	1.65 / 41.9	2.75 / 70	3.09 / 79	2.62 / 67	2.22 / 56	2.81 / 71	2.22 / 56	-	4 / 102	2.81 / 71
Weight empty (lbs/kg)	23 / 10.5	30 / 13.6	26 / 11.8	30 / 13.6	34 / 15.4	34 / 15.4	36 / 16.4	42 / 19	42 / 19	42 / 19
Weight full (lbs/kg)	59.5 / 27	62.5 / 28.3	66 / 30	87 / 39.5	94 / 42.5	96 / 43.5	111 / 50.5	120.4 / 54.6	120.4 / 54.6	120.4 / 54.6

FIVE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

MVE Doble Series



The traditional method of export shipment and distribution for biological products such as semen and vaccines has been based around wet shipment under liquid nitrogen. Over the past few years, many of the traditional shipping companies have either prohibited the shipment of liquid nitrogen, or placed hazardous material surcharges on shipments to the point where this method is uneconomical.

In many cases, vapor shippers have become the method of choice for cryogenic shipment. These shippers hold product at cryogenic temperature and allow most shipping methods to be employed, even for export shipments. From a transport point of view, this is a perfect solution. From a distribution standpoint, it leaves much to be desired. Once at a destination, the samples have to be transferred into a liquid storage tank and the shipping container has to be recovered by the shipping company. Therefore, there is an additional "return shipment".

Since the early 1960's Chart/MVE has been at the forefront of innovation and excellence in the field of storage and transportation of frozen biological samples. Once again, Chart/MVE has taken a step in front of all other cryogenic manufacturers.

The Doble series tanks are the first units to be designed for both vapor shipment and liquid storage. A unique absorbent layer in the base of the storage tanks enable them to be charged with nitrogen and employed as dry shippers with hold times of up to 30 days. Once at the final destination, the tanks can be filled with liquid and used for long term storage.

PRODUCT SPECIFICATIONS

MODEL PART NUMBER	Doble-11 110507886	Doble-20 11492151	Doble-28 11527730	Doble-34 11497948	Doble-47 11498684	Doble47-10 115543508
Number of Canisters	6	6	6	6	6	10
No. of 1/2 cc Straws (10/cane)	480	660	2400	2100	4500	3500
PERFORMANCE						
Liquid Nitrogen Capacity (liters)	10	18.5	28	32	46	46
Vapor Capacity (liters)	3.4	3.4	8.4	6.7	8.4	9.6
Static Evaporation Rate (liters/day)	0.17	0.1	0.3	0.2	0.4	0.4
Normal Working Duration (days for liquid)	42	125	50	100	74	72
Normal Working Duration (days for vapor)	21	21	24	30	21	21
UNIT DIMENSIONS						
Neck Opening (in/mm)	2 / 51	2.18 / 55	3.81 / 97	3.5 / 89	5 / 127	5 / 127
Overall Height (in/mm)	21.6 / 549	25.7 / 652	22 / 559	26.6 / 676	26.5 / 673	26.5 / 673
Outside Diameter (in/mm)	10.2 / 260	14.5 / 368	18.2 / 462	18.2 / 462	20 / 508	20 / 508
Canister Height (in/mm)	11 / 279	11 / 279	11 / 279	11 / 279	11 / 279	11 / 279
Canister Diameter (in/mm)	1.5 / 38	1.65 / 42	3.09 / 78	2.81 / 72	4 / 101.6	2.81 / 72
Weight Empty (lbs/kg)	19 / 8.7	25.2 / 12	34 / 16	39.2 / 18	47 / 21.3	48 / 21.8
Weight Charged (vapor lbs/kg)	24 / 11	30.2 / 14	49 / 22	51 / 23	63 / 28.6	64 / 29
Weight Full (liquid lbs/kg)	36 / 16	60 / 27	84 / 38	95 / 43	125 / 57	120 / 54.5
Lbs/Kg of Cabosil	1 / .45	1 / .45	2.5 / 1.2	2 / .9	2.5 / 1.2	3.4 / 1.6

THREE Year Vacuum Warranty

Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.

MVE Vapor Shippers



MVE Vapor Shipper containers are designed for the safe transportation of biological samples at cryogenic (-150°C or colder) temperatures. Fabricated from durable, lightweight aluminum, they employ a hydro-phobic absorbent that contains the liquid nitrogen for "spill free" shipping. The absorbent also repels moisture and humidity, assuring the maximum holding time. This eliminates the necessity to dry units between uses.

A protective shipping carton is available for all models (except the SC 20/12V) which protects the container from being placed on its side and helps in withstanding the rigors of transportation. These containers may be used to ship your samples with a "non-hazardous" classification throughout the world, thus reducing costs and helping to assure sample viability.

PRODUCT SPECIFICATIONS

MODEL	SC 2/1V	SC 4/2 V	SC 4/3V	SC 20/12V	XC 20/3V*	Mini Moover	Cryo Moover	Cryo Shipper	Cryo Shipper XC
MAX. STORAGE CAPACITY									
Number of canisters	1	1	1	6	4 + 1 Center	1	7	1 Rack	-
No. of 1/2 cc straws (10/cane)	-	280	120	540	2,500/2,000*	60	3080	-	-
No. of 1/2 cc straws (1 Level Bulk)	88	440	210	780	3,750/3,000*	88	4354	-	-
No. of 1/4 cc straw (1 Level Bulk)	182	938	452	1,630	7,410/6,000	8904	-	-	-
No. of 1.2 & 2.0 ml vials (5/cane)	-	95	40	150	675/560*	20	945	-	-
No. of 1.2 & 2.0 ml vials (6/cane)	9	106	48	180	840/672*	24	1134	500	966 (Bulk)
No. of blood bags stored (4R9953)	-	-	-	-	-	-	-	10	10
PERFORMANCE									
Liquid nitrogen capacity (liters)	1.5	3.6	4.3	12.3	6.8	2.9	4.2	8.5	10
Static evaporation rate (liters/day)	0.19	0.26	0.20	0.09	0.3	0.20	0.35	0.85	.7
Static holding time (days)	8	14	21	85	23	14	12	10	14
UNIT DIMENSIONS									
Neck opening (in/mm)	1.4 / 35	2.75 / 70	2 / 51	2 / 51	3.81 / 96.7	1.4 / 35	3.8 / 97	8.5 / 216	8.5 / 216
Overall height (in/mm)	13.5 / 343	18.4 / 468	19.4 / 492	25.7 / 652	25 / 635	19.5 / 495	22 / 558	21.5 / 546	23 / 584
Outside diameter (in/mm)	7.25 / 184	8.7 / 222	8.7 / 222	14.5 / 368	14.50 / 368	7.2 / 184	18.3 / 464	14.5 / 369	15 / 381
Canister height (in/mm)	5 / 127	11 / 278	11 / 278	11 / 279	11 / 278	11 / 278	11 / 278	-	12.5 / 317.5**
Canister diameter (in mm)	1.2 / 31	2.62 / 67	1.81 / 46	1.5 / 38	3.2 / 80	1.2 / 31	3.1 / 79	-	-
Weight empty (lbs/kg)	6 / 2.7	11 / 5	13 / 5.9	30 / 13.6	23 / 10.5	8 / 3.6	30.5 / 13.8	24 / 10.9	30 / 13.6
Weight charged (lbs/kg)	8.8 / 4	18 / 8.1	20 / 9.3	52 / 23.6	35 / 16	11.6 / 5	38 / 17.2	37.5 / 17	47 / 21.4

Static evaporation rate and static holding times are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances. Without center absorbent canister two week holding time, greater storage capacity

* With center absorbent canister (3 week holding time)

** Usable Height

THREE Year Vacuum Warranty

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