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BREEDER DEWARS SOLUTION

By Antech Scientific

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2021-06

Company Profile

ANTECH Group is committed to offering high quality laboratory instruments and medical products while matching to the unique needs of customer. Our dedication is to provide quality instruments with lifetime care.

Antech Group sets its production facilities in 5 cities. The product lines include:

Cold storage - Cryogenic freezer, ULT freezer, deep freezer, pharmacy refrigerator, blood bank refrigerator, vaccine refrigerator, mortuary freezer and cold room

Cryogenic storage - liquid nitrogen freezer, liquid nitrogen container and Dewar vessel

In accordance to our unique business philosophy, we always remind ourselves to avoid any short-sighted activities and to focus on long-term success and growth.

We Antech team treat our customers as long-term partners & life-time friends. We are very clear that any of our success comes and will come from satisfaction of our partners and customers. "Quality instruments, lifetime care" is commitment to our partners, as well as to ourselves.

Directory

CryoMajor series

Introduction

CryoMajor series are economical small and medium size liquid nitrogen containers for long term static state storage. CryoMajor series are made of high strength and lightweight aluminum alloy. There is multilayer superior performance thermal insulation inside.

Various accessories are optional.Mainly apply to animal husbandry and laboratories.

Key Features

1. High strength and lightweight aluminum construction
2. Ultra-low evaporation losses
3. Numbered index canisters
4. Mobile roller bases optional
5. Lockable lids
6. Straw storage
7. LN_2 dispenser (optional)
8. 5 year vacuum warranty

Important Accessories

1. 600mm Liquid Level Ruler
2. 1000mm Liquid Level Ruler
3. LN_2 Dispenser

Technical Specification

Model	CryoMajor 2/35	CryoMajor 3/50	CryoMajor 6/50	CryoMajor 10/50	CryoMajor15/50
Maximum Storage Capacity					
Number of Canisters	3	6	6	6	6
Number of Straws (0.5ml)	165	792	792	792	792
Number of Straws (0.25ml)	330	1788	1788	1788	1788
Performance					
Liquid N2 Capacity(L)	2	3	6	10	15
Static Evaporation(L/D)	0.08	0.12	0.12	0.12	0.11
Static Holdover time(Day)	24	26	52	86	134
Unit Dimensions					
Neck Diameter (mm)	35	50	50	50	50
Overal Height(mm)	428	435	482	552	591
External Diameter (mm)	204	223	300	300	394
Canister Diameter(mm)	25	38	38	38	38
Canister Height (mm)	120	120	120	120	120
Weight Empty (KG)	2.6	3.1	4.8	5.9	8.5
Weight Full (KG)	4.2	5.6	9.7	14.1	18.2

Model		CryoMajor13/50L	CryoMajor 20/50 CryoMajor 20/50L	CryoMajor 20B/50	CryoMajor 25/50 CryoMajor 25/50L	CryoMajor 30/50 CryoMajor 30/50L
Maximum Storage Capacity						
No. of Canister		6	6	6	6	6
No. of Straws	0.5ml	——	792	792	792	792
(1-level Canister)	0.25ml	——	1788	1788	1788	1788
No.of Straws	0.5ml	1284	1284	1284	1284	1284
(2-level Canister)	0.25ml	2832	2832	2832	2832	2832
Performance						
Liquid Nitrogen Capacity (L)		13	20	20	25	31.5
Static Evaporation (L/day)		0.12	0.12	0.20	0.14	0.12
Static Holdover time(Day)		108	166	101	180	254
Unit Dimensions						
Neck Opening (mm)		50	50	50	50	50
Overall Height (mm)		623	672	672	700	705
External Diameter (mm)		310	394	394	394	462
Canister External Diameter (mm)		38	38	38	38	38
Canister Height (mm)		276	120/276	120/276	120/276	120/276
Weight Empty (kg)		6.3	9.5	9.5	10.7	12.9
Weight Liquid Full (kg)		16.7	22.3	22.3	30.7	38.1

Technical Specification

Model		CryoMajor 30B/50	CryoMajor 30/80L	CryoMajor 30/125	CryoMajor 35/50 CryoMajor 35/50L	CryoMajor 35B/80	CryoMajor 35/80L
Maximum Storage Capacity							
No. of Canister		6	6	6	6	6	6
No. of Straws	0.5ml	792	——	——	792	2244	——
(1-level Canister)	0.25ml	1788	——	——	1788	5022	——
No.of Straws	0.5ml	1284	3624	9048	1284	3624	9048
(2-level Canister)	0.25ml	2832	8460	19944	2832	8460	3624
Performance							
Liquid Nitrogen Capacity (L)		31.5	31.5	31.5	35.5	35.5	35.5
Static Evaporation (L/day)		0.2	0.21	0.35	0.12	0.30	0.12
Static Holdover time(Day)		159	147	90	286	119	286
Unit Dimensions							
Neck Opening (mm)		50	80	125	50	80	50
Overall Height (mm)		705	710	705	750	753	750
External Diameter (mm)		462	462	462	462	462	462
Canister External Diameter (mm)		38	63	97	38	63	38
Canister Height (mm)		120/276	120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)		12.9	13.1	12.9	14.2	14.5	14.2
Weight Liquid Full (kg)		38.1	38.3	38.1	42.2	42.5	42.2

Model		CryoMajor35/125 CryoMajor35/125L	CryoMajor47/127L	CryoMajor47/127T CryoMajor47/127TL	CryoMajor50B/50 CryoMajor50B/50L	CryoMajor50B/125L
Maximum Storage Capacity						
No. of Canister		6	6	10	6	6
No. of Straws	0.5ml	5124	——	8540	792	——
(1-level Canister)	0.25ml	11640	——	19920	1788	——
No.of Straws	0.5ml	9048	9048	15080	1284	9048
(2-level Canister)	0.25ml	20760	19944	33240	2832	19944
Performance						
Liquid Nitrogen Capacity (L)		35.5	47	47	50	50
Static Evaporation (L/day)		0.41	0.36	0.36	0.23	0.45
Static Holdover time(Day)		86	130	130	213	110
Unit Dimensions						
Neck Opening (mm)		125	125	127	50	125
Overall Height (mm)		748	718	718	811	818
External Diameter (mm)		462	508	508	462	462
Canister External Diameter (mm)		97	104	72	63	97
Canister Height (mm)		120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)		14.6	15	15	15.2	15.4
Weight Liquid Full(kg)		43.0	53.54	55.6	55.4	56.2

Remark:

1.Model number end without "L" are supplied with 110mm or 120mm length canister. One layer of straws can be loaded.

2.Model number end with "L" are supplied with 260mm or 276mm length canister. Two layers of straws can be loaded.

3.For example, CryoMajor30/50 is supplied with canister height 120mm, while CryoMajor 30/50L is supplied with canister height 276mm.

New Products and Canes

(CryoMajor 35/125T)

CryoMajor series will be also used to store 0.5ML-5ML vials with cane.The storage quantity shown in the table below:

Technical Specification

Canister Model — Length 120mm, Diameter 38mm(50 neck opening) — Length 276mm, Diameter 38(50 neck opening)

Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	5	3	15	90	5	6	30	180
1.5ml	5	3	15	90	5	6	30	180
2ml	5	3	15	90	5	6	30	180
3ml	5	3	15	90	5	6	30	180
5ml	5	1	5	30	5	3	5	90

Canister Model — Length120mm, Diameter 63mm(80 neck opening) — Length 276mm, Diameter 63(80 neck opening)

Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	16	3	48	288	16	6	96	576
1.5ml	16	3	48	288	16	6	96	576
2ml	16	3	48	288	16	6	96	576
3ml	16	3	48	288	16	6	96	576
5ml	16	1	16	96	16	3	48	288

Canister Model — Length120mm, Diameter 72mm(127 neck opening) — Length 276mm, Diameter 72(127 neck opening)

Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	21	3	63	630	21	6	126	1260
1.5ml	21	3	63	630	21	6	126	1260
2ml	21	3	63	630	21	6	126	1260
3ml	21	3	63	630	21	6	126	1260
5ml	21	1	21	210	21	3	63	630

Canister Model — Length 120mm, Diameter 97mm(125 neck opening) — Length 276mm, Diameter 97(125 neck opening)

Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	40	3	120	720	40	6	240	1440
1.5ml	40	3	120	720	40	6	240	1440
2ml	40	3	120	720	40	6	240	1440
3ml	40	3	120	720	40	6	240	1440
5ml	40	1	40	240	40	3	120	720

Canister Model — Length 120mm, Diameter 104mm(127 neck opening) — Length 276mm, Diameter 104(127 neck opening)

Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	---	---	---	---	---	---	---	---
1.5ml	46	3	138	828	46	6	276	1656
2ml	46	3	138	828	46	6	276	1656
3ml	46	3	138	828	46	6	276	1656
5ml	46	1	46	276	46	3	138	828

CryoTrans series

Introduction

CryoTrans series is designed for storage and short-distance transportation of small amount of liquid nitrogen.It is equipped with rubber protection rings and prefixed bottom pad for safety.Stainless steel roller base is optional for convenient transportation.Cryo Trans series is widely used in animal husbandry and laboratories.

Key Features

1. Strong,lightweight aluminum construction
2. Low liquid nitrogen evaporation
3. Special liquid nitrogen transportation design
4. CE Certificate
5. 5-year vacuum warranty

Important Accessories

1. Liquid nitrogen level ruler
2. Roller base.

Technical Specification

Model	CryoTrans3	CryoTrans6	CryoTrans10	CryoTrans20	CryoTrans30	CryoTrans35	CryoTrans 35B/80	CryoTrans 35B/125	CryoTrans50	CryoTrans 50B/125
Performancce										
Capacity (L)	3	6	10	20	30	35	35	35	50	50
Neck Diameter (mm)	50	50	50	50	50	50	80	50	50	125
Static Evaporation Rate (L/day)	0.12	0.12	0.12	0.20	0.20	0.20	0.30	0.41	0.24	0.45
Unit Dimensions										
Overall Height (mm)	435	482	552	672	706	749	753	748	810	818
External Diameter (mm)	223	300	300	394	462	462	462	462	462	462
Weight Empty (KG)	3.1	4.8	6.1	9.5	12.9	14.2	14.5	14.6	17.2	17.3
Weight Full (KG)	5.56	9.72	14.1	25.9	37.5	42.9	43.2	43.3	56.4	56.5

CryoCarrier series

Introduction

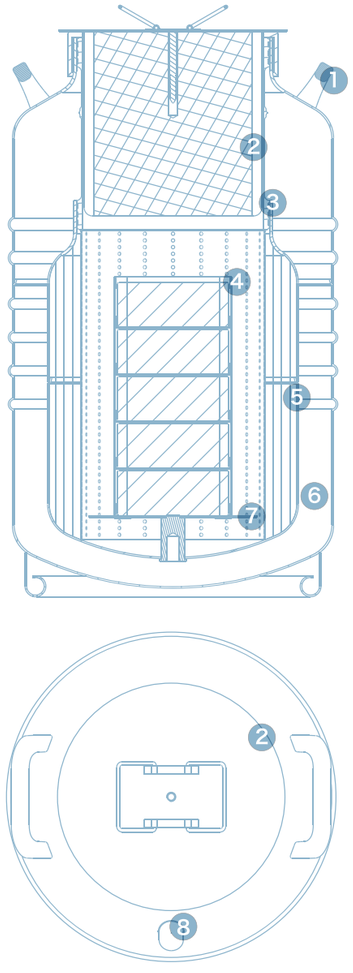
CryoCarrier series is dry shipper containers. It is designed for biology, livestock breeding, research and medical fields and enables the biological samples, straws, cryovials or blood bags to transport below-150 C environment. There is liquid nitrogen absorbent materials placed in the inner tank, which avoids the risk of outflow of liquid nitrogen. The CryoCarrier dry shipper meets the IATA and protect your valuable samples in safe conditions for both users and transporters during transportation.

Key Features

1. Vapor phase cryogenic storage
2. Robust and durable aluminum construction
3. Lockable lids
4. No spillage of liquid nitrogen
5. Available for biological samples straws, cryovials or blood bags
6. 3 years vacuum warranty

Advantages

1. Reliable absorption materials, rapid absorption of liquid N2
2. Meet the standard of IATA (The international Transport Association)
3. Excellent products construction and superior vacuum performance to ensures the maximum storage time
4. Unique stainless steel screen construction ensures samples storage space clean
5. All models optional equipped with liquid level monitor



1. Handles
2. Cap Plug
3. Neck Tube
4. Canister
5. Liquid Nitrogen Absorption Layer
6. Vacuum Jacket
7. Stage
8. Vacuum Sealing Joint

Technical Specification

Model		CryoCarrier 3 CryoCarrier 3L	CryoCarrier 6	CryoCarrier 8	CryoCarrier 10L CryoCarrier 10R	CryoCarrier 15R	CryoCarrier 25L CryoCarrier 25R
Maximum Storage Capacity							
Straws	Number of Canister	1	1	1	1	1	1
	Number of Straws (0.5ml)	132/264	374	374	854	——	3536
	Number of Straws (0.25ml)	298/596	837	837	1940	——	7840
Vials	No. of Rack	——	——	——	1	1	1
	Layer of Rack	——	——	——	4	3(10X10)	5(10X10)
	1.2ml/2ml Vials	——	——	——	100	300	500
Blood Bags (25ml)	No. of Rack	——	——	——	1	1	1
	Layer of Rack	——	——	——	2	1	3
	Number of 25ml bags	——	——	——	6	15	45
Blood Bags (50ml)	No. of Rack	——	——	——	1	1	1
	Layer of Rack	——	——	——	1	1	2
	Number of 50ml bags	——	——	——	3	15	30

Performance						
Capacity (L)	3	7.5	8.0	10	10	25
Static Evaporation Rate (L/Day)	0.16	0.20	0.22	0.43	0.43	0.84
Static holdover time (Day)	20	37	35	23	23	29

Unit Dimensions						
Neck Diameter (mm)	50	80	80	125	125	216
Overall Height (mm)	428	487	509	555	555	678
External Diameter (mm)	223	300	300	300	300	394
Canister Diameter (mm)	38	63	63	97	——	195
Canister Height (mm)	120/276	120	120	276	——	276
Weight Empty (KG)	3.2	4.9	6.2	5.9	5.9	11.2
Weight Full (KG)	4.3	7.3	9.0	8.7	8.7	19.0

★Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is just an arbitrary reference,applying to estimate container performance under normal operating conditions. Actual working time may vary due to atmospheric conditions, container usage history, manufacturing tolerances and individual patterns of usage. Divide static holding days by 1.6, and you get empirical value.

CryoMatrix series

Why CryoMatrix?

High density storage

Compared with similar products, CryoMatrix freezers have a small footprint and can store a large number of samples. It truly realizes high-density storage, which not only saves space, but also reduces the storage cost per sample. Both horizontal and vertical rack systems available.

Excellent temperature uniformity

Vacuum insulated stainless steel tank structure, high vacuum coverage, to ensure excellent thermal insulation performance. When samples are stored at vapor phase, top level sample temperature is lower than -180℃.

Stable opening temperature

The innovative lid and vacuum insulated neck design reduce LN2 evaporation. Even when the lid is opened for up to 48 hours, the inner temperature can remains stable.

Advanced temperature monitoring system

The monitoring system based on microprocessor and platinum temperature probe can display the maximum and minimum temperature inside the tank in real time with an accuracy of ±1°C. The user can set the alarm point by himself, with the option of alarm mute.

Automatic LN2 filling & level monitoring system

The liquid level monitoring system based on high-precision differential pressure sensor displays the liquid level in real time to ensure the safety and reliability of the automatic filling of liquid nitrogen. The color touch screen can display: top temperature, bottom temperature, liquid level height, daily liquid nitrogen consumption and other parameters.

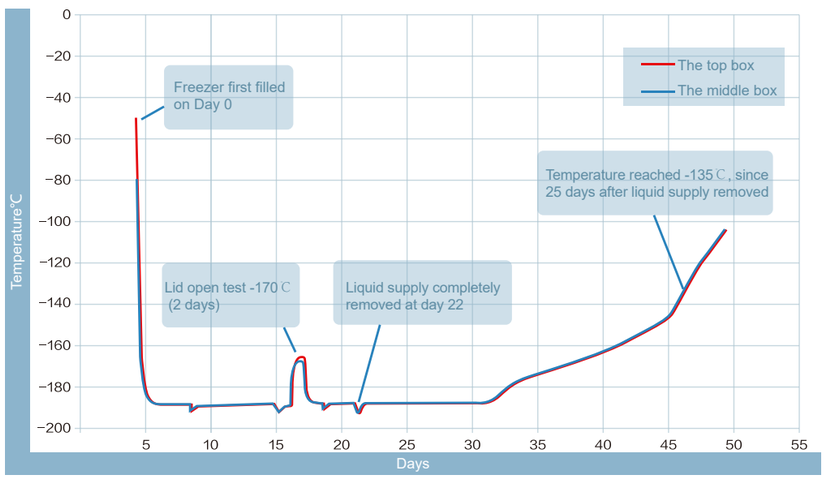
Hot gas bypass

The hot gas bypass design can remove the high temperature nitrogen (gas) in the pipeline before the liquid nitrogen is injected, so as to ensure that only ultra-low temperature liquid nitrogen is injected into freezer, which avoids the temperature fluctuation in the freezer & thermo shock to samples during filling process, protecting the safety of samples.

Key Features

1. Multiple capacity freezers, from 370L to 1800L, 2.0ml vials storage capacity from 15,600 to 94,500.
2. Excellent temperature uniformity and stability, enabling samples to be stored at -180°C vapor phase environment.
3. Excellent vacuum performance and structural design ensure minimum liquid nitrogen consumption and lower storage costs.
4. Advanced temperature, liquid level monitoring and alarm system, enable remote monitoring.
5. Automatic supply of liquid nitrogen, safe and labor-saving.
6. The liquid nitrogen supply system is controlled by multiple solenoid valves, which can effectively prevent the overflow of liquid nitrogen and sample contamination caused by high LN2 level.
7. Manual filling available under special circumstances.
8. Compatible with vapor phase and liquid phase storage modes, users can choose according to their needs.
9. The optimized mechanism design realizes high-density storage to save space.

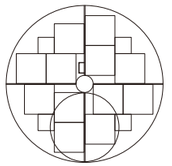
Temperature Test Graph



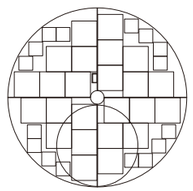
CryoMonitor 3000
Intelligent control system

1. HMI human-machine interactive touch screen, display temperature, liquid level, temperature curve and alarm information.
2. Important events such as temperature, alarm, liquid nitrogen fill, can be checked, and can also download through USB disk.
3. Various alarms, and the alarm information can be stored and downloaded through the USB disk.
4. Operating data, such as temperature and liquid level, can be stored for up to 10 years.
5. Optimized structure design to achieve the best sample storage density and save space.

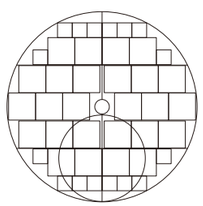
RackLayouts



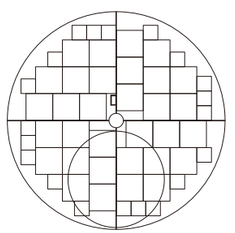
Cryomatrix 15k/19K



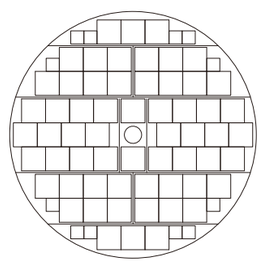
Cryomatrix 28k/39K



CryoMatrix 42k



CryoMatrix 55K



CryoMatrix 94K

Humanized Design

1. Automatic defogging function, make it easier to find samples and shorten lid opening time.
2. After 48 hours of opening the lid, the temperature in the tank remains below -150℃ (according to the factory test standard).
3. The remote alarm interface can be connected to the central alarm system.
4. Standard automatic charging backup battery to ensure the normal operation of the system for a period of time after power failure.

Racks for CryoMatrix Freezers

Slim rack/ Vertical rack

Square rack/ Horizontal rack

Slim rack/ Vertical rack	Description	Vial	Dimension, W×D×H(mm)
VR-4-2	4 layer, for 100/81-well boxes	1.2/2ml	138*58*575
VR-5-2	5 layer, for 100/81-well boxes	1.2/2ml	138*58*710
VR-6-2	6 layer, for 100/81-well boxes	1.2/2ml	138*58*845

Square rack/ Horizontal rack	Description	Vial	Dimension, W×D×H(mm)
HR-12-2	12 layer, for 100/81-well boxes	1.2/2ml	139*139*694
HR-12-2M	12 layer, for 25-well boxes	1.2/2ml	81*81*694
HR-13-2	13 layer, for 100/81-well boxes	1.2/2ml	139*139*751
HR-13-2M	13 layer, for 25-well boxes	1.2/2ml	81*81*751
HR-14-2	14 layer, for 100/81-well boxes	1.2/2ml	139*139*808
HR-14-2M	14 layer, for 25-well boxes	1.2/2ml	81*81*808
HR-15-2	15 layer, for 100/81-well boxes	1.2/2ml	139*139*865
HR-15-2M	15 layer, for 25-well boxes	1.2/2ml	81*81*865

Technical Specification

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 42K	CryoMatrix 55K	CryoMatrix 94K
Vials Capacity, Square Rack							
1.2 & 2 ml vials (internally threaded)	15,600	19,500	28,000	39,200	42,000	55,500	94,500
Qty of rack (100-cell box)	12	12	24	24	26	32	60
Qty of rack (25-cell box)	4	4	16	16	16	20	12
Number of shleves per rack	12	15	10	14	14	15	15
LN2 Capacity							
LN2 capacity, L	370	460	550	800	800	1000	1800
LN2 capacity at vapor platform, L	55	55	133	133	133	200	295
Dimensions & Weight							
Neck opening, mm	320	320	445	445	445	500	635
Usable internal height, mm	680	875	600	780	780	870	870
Inner diameter, mm	730	730	980	980	980	1130	1390
Overall Height, mm	1400	1450	1505	1605	1605	1680	1685
Liftover height	920	1118	1052	1052	1052	1118	1118
Door width requirement	815	815	1090	1090	1090	1300	1565
Weight empty, kg	258	283	310	355	358	580	805
Weight full, kg	559	657	418	1006	1009	743	2270
Functions							
Controller	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen
Temperature /liquid level diagram	Standard	Standard	Standard	Standard	Standard	Standard	Standard
USB port/ data download	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Password access	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Automatic filling	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Backup battery	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Blood bag qty / rack layer/ rack qty							
791 OS/U（25ml）	1224/6/204	1836/9/204	2490/6/415	3320/8/415	3184/8/398	4160/8/520	6432/8/804
4R9951（50ml）	768/6/128	1024/8/128	1488/6/248	1736/7/248	1687/7/241	2528/8/316	3920/8/490
4R9953（250ml）	416/4/104	520/5/104	812/4/203	812/4/203	768/4/192	1320/5/264	2010/5/402
4R9955（500ml）	304/4/76	380/5/76	608/4/152	608/4/152	576/4/144	1000/5/200	1550/5/310
DF200（200ml）	236/4/59	295/5/59	496/4/124	496/4/124	488/4/122	780/5/156	1230/5/246
DF200（700ml）	/	/	/	256/4/64	264/4/66	440/5/88	680/5/136