



## Thermo Scientific Cryopreservation Equipment



Indefinite storage, infinite possibilities

Researchers worldwide protect more than two billion samples inside Thermo Scientific cold storage equipment.



With +4°C refrigerators to -196°C cryogenic freezers and Thermo Scientific Nalgene and Nunc consumables, you're free to concentrate on your work without having to worry about your valuable samples.

- **Thermo Scientific CryoMed** controlled-rate freezers prepare your samples prior to cryogenic storage, ensuring maximum viability
- **Thermo Scientific CryoPlus** LN<sub>2</sub> storage systems provide the ideal combination of liquid nitrogen storage reliability and microprocessor technology
- **Thermo Scientific dewars** offer cost-effective flexibility and portability
- A wide range of **accessories** including racks, consumables and safety alarms work with our storage systems, providing a comprehensive solution for long-term sample protection



**Thermo Scientific Nalgene and Nunc** cryogenic storage give you everything you need to safely store precious specimens, organize freezer space and simplify sample retrieval. Nalgene® and Nunc™ combine to provide one-stop shopping for the widest variety and highest quality of externally and internally threaded cryovials, storage boxes and lap top coolers.

### Thermo Scientific Cryopreservation Equipment

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# Thermo Scientific CryoMed Controlled-Rate Freezers



Our CryoMed freezers feature an integrated control system (consisting of freezing chamber, microprocessor control, and printer – all in one bench top unit), allowing multiple freezing profiles to be tailored to specific protocols. Freezer functionality is enhanced by a MS Windows®-based controlled-rate freezing interface software (included) that connects to your PC and external inkjet printer.

## Easy Programming and Monitoring

- Chamber and sample temperatures and operation status are simultaneously displayed on a backlit LCD
- Chamber temperatures are monitored by a fixed-mount Type T thermocouple
- Sample temperature is monitored by Type T thermocouple with flexible cable (included)
- Pre-cool step automatically begins the temperature ramp when chamber and sample temperatures are equilibrated within 1°C
- Audible indicators alert operator when hold time has elapsed
- Continual operation if power outage lasts less than ten seconds; audible/visual alarm for outages lasting longer than ten seconds
- Modifiable access code for added security
- Six standard preset profiles and 10 user defined profiles (20 steps each) for customer-created profiles are standard. (Unlimited user defined profiles when operating through a PC).
- Preset profiles, which are suggested starting points for freezing protocols, can be copied and pasted easily to create new profiles. New profiles can be edited and named to meet your specific freezing protocol requirements.



Top- and front-access models are designed for human IVF and easy “seeding”



### LN<sub>2</sub> Freezing System Components

- Intuitive control panel and integrated thermal printer
- Dual solenoid valves increase LN<sub>2</sub> injection volume for precise temperature control and accelerated freezing for optimum cell viability
- Specifically designed air handling system and patented liquid nitrogen injection ring work in tandem for precise temperature control and uniformity
- Overtemperature protection for heating element
- Specific models designed for human IVF use (510(k) number K021042)
- IVF chambers allow convenient top access for manual sample “seeding” applications

### Construction

- Type 304 stainless-steel with exterior powder-coat finish
- Foamed in-place polyurethane insulation and Teflon® heat break minimizes cabinet condensation
- Bulb-style gaskets ensure tight door seal



# Thermo Scientific CryoMed

## Order Information

Product Name	CryoMed	CryoMed	CryoMed	CryoMed	CryoMed
Model No. (120V)	7450	7452	7454	7456	7458
Model No. (220V)	7451	7453	7455	7457	7459
Model No. (100V)	7472	7473	7474	7475	7476
<b>Selection Guide</b>					
Application	Sample Preparation	Sample Preparation	Sample Preparation	Sample Preparation	Sample Preparation
Preparation Type	Controlled Rate Freezing	Controlled Rate Freezing	Controlled Rate Freezing	Controlled Rate Freezing	Controlled Rate Freezing
Chamber Volume	0.6 cu ft / 17 Liters	1.2 cu ft / 34 Liters	1.7 cu ft / 48.1 Liters	0.6 cu ft / 17 Liters	1.2 cu ft / 34 Liters
Access Type	Front Access	Front Access	Front Access	"Top & Front" Access IVF units	"Top & Front" Access IVF units
Temperature Range	50°C to -180°C	50°C to -180°C	50°C to -180°C	50°C to -180°C	50°C to -180°C
<b>System Capability Specification</b>					
<b>Straw Rack</b>	4	8	12	4*	8*
Number of straws per rack	40	40	40	40*	40*
Maximum number of straws	160	320	480	160*	320*
<b>Cane Rack</b>	1	1	1	1*	1*
Number of canes per rack	77	162	162	77*	162*
Maximum number of canes	77	162	162	77*	162*
<b>Canister Rack Cord Blood</b>	3	6	9	3*	6*
Number of canisters per cord blood rack	10	10	10	10*	10*
Maximum number of canisters for cord blood rack	30	60	90	30*	60*
<b>Canister Rack Adjustable</b>	N/A	2	2	N/A	2*
Number of canisters per adjustable rack	N/A	11	11	N/A	11*
Maximum number of canisters for adjustable	N/A	22	22	N/A	22*
<b>Vial Rack Holder</b>	1	1	1 & 1	1*	1*
Number of 1.2 & 2mL racks per holder	5	5	5	5*	5*
Number of 1.2 & 2mL vials per rack	76	161	237	76*	161*
Maximum number of 1.2 & 2mL vials	380	805	1,185	380*	805*
Number of 4 & 5mL racks per holder	3	3	3	3*	3*
Number of 4 & 5mL vials per rack	76	161	237	76*	161*
Maximum number of 4 & 5mL vials	228	483	711	228*	483*
<b>Skin Rack 2 Level</b>	1	2	3	1*	2*
Number of packets per 2 skin level rack	48	48	48	48*	48*
Maximum number of packets per 2 skin level rack	48	96	144	48*	96*
<b>Skin Rack 1 Level</b>	2	4	6	2*	4*
Number of packets per 2 skin level rack	24	24	24	24*	24*
Maximum number of packets per 2 skin level rack	48	96	144	48*	96*
<b>Bag press Nexell R4R9953 (Fenwal 4R5461)</b>	4	8	16	4*	8*
Number of bags Nexell R4R9953 (Fenwal 4R5461) per press	2	2	2	2*	2*
Maximum number of Nexell R4R9953 (Fenwal 4R5461) bags	8	16	32	8*	16*
<b>Bag press Gambro DF-200</b>	N/A	4	8	N/A	4*
Number of bags Gambro DF-200	N/A	2	2	N/A	2*
Maximum number of Gambro DF-200 bags	N/A	8	16	N/A	8*
<b>Bag press Delmed 2030-2</b>	N/A	4	8	N/A	4*
Number of bags Delmed 2030-2	N/A	4	4	N/A	4*
Maximum number of Delmed 2030-2 bags	N/A	16	32	N/A	16*

\*These accessories can only be used when top loading cane vial and straw holders are not in use

# Thermo Scientific CryoMed

## Order Information

Product Name	CryoMed	CryoMed	CryoMed	CryoMed	CryoMed
<b>Bag press Nexell R4R9953 (Fenwal 4R5461)</b>	N/A	4	4	N/A	4*
Number of bags Nexell R4R9953 (Fenwal 4R5461)	N/A	4	4	N/A	4*
Maximum number of Nexell R4R9953 (Fenwal 4R5461) bags	N/A	16	16	N/A	16*
<b>Bag press Gambro DF-200</b>	N/A	4	8	N/A	4*
Number of bags Gambro DF-200	N/A	4	4	N/A	4*
Maximum number of Gambro DF-200 bags	N/A	16	32	N/A	16*
<b>Bag press Gambro DF-700</b>	N/A	4	8	N/A	4*
Number of bags Gambro DF-700	N/A	2	2	N/A	2*
Maximum number of Gambro DF-700 bags	N/A	8	16	N/A	8*
<b>Bag press Nexell R4R9955 (Fenwal 4R5462)</b>	4	8	12	4*	8*
Number of bags Nexell R4R9955 (Fenwal 4R5462)	2	2	2	2*	2*
Maximum number of Nexell R4R9955 (Fenwal 4R5462) bags	8	16	24	8*	16*
<b>Holders &amp; Plug for IVF application</b>					
0.25 / 0.5mL straw holder (holds 4 straws)	N/A	N/A	N/A	N/A	N/A
1.2 / 2.0mL vial holder, (holds 1 vial)	N/A	N/A	N/A	N/A	N/A
1.2 / 2.0 / 4.0 / 5.0mL cane holder (holds 6, 5, 4, 3 canes)	N/A	N/A	N/A	N/A	N/A
Sleeve plug	N/A	N/A	N/A	N/A	N/A
<b>Chamber Dimensions</b>					
Exterior (w x h x d)	31.7 x 21.2 x 20.4 inches 80.5 x 53.8 x 51.8cm	37.7 x 21.2 x 20.4 inches 95.8 x 53.8 x 51.8cm	43.7 x 21.2 x 20.4 inches 111 x 53.8 x 51.8cm	31.7 x 22.5 x 20.4 inches 80.5 x 57.2 x 51.8cm	37.7 x 22.5 x 20.4 inches 95.8 x 57.2 x 51.8cm
Interior (w x h x d)	7 x 12 x 13 inches 17.8 x 30.5 x 33cm	13 x 12 x 13 inches 33 x 30.5 x 33cm	19 x 12 x 13 inches 48.3 x 30.5 x 33cm	7 x 12 x 13 inches 17.8 x 30.5 x 33cm	13 x 12 x 13 inches 33 x 30.5 x 33cm
<b>Product Weight</b>					
Net	140 lbs. / 63.5 kg	160 lbs. / 72.6 kg	180 lbs. / 81.63 kg	140 lbs. / 63.5 kg	160 lbs. / 72.6 kg
Packaged / Shipping	200 lbs. / 90.7 kg	215 lbs. / 97.5 kg	235 lbs. / 106.6 kg	200 lbs. / 90.7 kg	215 lbs. / 97.5 kg
<b>Installation Information</b>					
Product clearance	Add 2.8 inches (7.1cm) to F-B for utilities & door handle	Add 2.8 inches (7.1cm) to F-B for utilities & door handle	Add 2.8 inches (7.1cm) to F-B for utilities & door handle	Add 2.8 inches (7.1cm) to F-B for utilities & door handle	Add 2.8 inches (7.1cm) to F-B for utilities & door handle
Utility connection	0.5 inches, 45 degree flare, 6 ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6 ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6 ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6 ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6 ft (1.8m) SS flexible hose
Electrical 100V, 50/60 Hz	10.5 FLA, operating range 90-110V, NEMA 5-15P plug	10.5 FLA, operating range 90-110V, NEMA 5-15P plug	10.5 FLA, operating range 90-110V, NEMA 5-15P plug	10.5 FLA, operating range 90-110V, NEMA 5-15P plug	10.5 FLA, operating range 90-110V, NEMA 5-15P plug
Electrical 120V, 60 Hz	12 FLA, operating range 108-132V, NEMA 5-15P plug	12 FLA, operating range 108-132V, NEMA 5-15P plug	12 FLA, operating range 108-132V, NEMA 5-15P plug	12 FLA, operating range 108-132V, NEMA 5-15P plug	12 FLA, operating range 108-132V, NEMA 5-15P plug
Electrical 220V, 50/60 Hz	5.5 FLA, operating range 207-253V, CEE 7/7 plug	5.5 FLA, operating range 207-253V, CEE 7/7 plug	5.5 FLA, operating range 207-253V, CEE 7/7 plug	5.5 FLA, operating range 207-253V, CEE 7/7 plug	5.5 FLA, operating range 207-253V, CEE 7/7 plug
LN <sub>2</sub> supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank

\*These accessories can only be used when top loading cane vial and straw holders are not in use

# Thermo Scientific CryoMed Accessories



- 1 Core Blood Freezing Rack and Optional Canisters
- 2 Two Level Skin Rack
- 3 1.2/2.0mL Cryo Rack and Holder
- 4 Cane Freezing Rack
- 5 Fenwals
- 6 Thermocouple Sensors
- 7 Flexible Metal Hose
- 8 Straw Rack

## Order Information

**Product Name**      **CryoMed**      **CryoMed**      **CryoMed**      **CryoMed**      **CryoMed**

### Accessories

#### Racks

Straw Rack (0.25/0.5mL straws which holds 40 straws)	4000294	4000294	4000294	4000294*	4000294*
Cane Rack (162 canes)	N/A	4000303	4000303	N/A	4000303*
Cane Rack (77 canes)	4000700	4000700	4000700	4000700*	4000700*
Canister Rack Cord Blood holds 10 of 4000610 canisters	4000340	4000340	4000340	4000340*	4000340*
Canister Rack Adjustable (10 position, 5.875 to 7.875 inches)	185089	185089	185089	185089*	185089*
Vial Rack Holder for small racks (1.2 & 2mL vials) holds 5	4000702	4000702	4000702	4000702*	4000702*
Small rack for 1.2 & 2mL vials holds 76	4000701	4000701	4000701	4000701*	4000701*
Vial Rack Holder for large racks (1.2 & 2mL vials) holds 5	N/A	4000704	4000704	N/A	4000704*
Large rack for 1.2 & 2mL vials holds 161	N/A	4000703	4000703	N/A	4000703*
Vial Rack Holder for small racks (4 & 5mL vials) holds 3	4000706	4000706	4000706	4000706*	4000706*
Small rack for 4 & 5mL vials holds 76	4000705	4000705	4000705	4000705*	4000705*
Vial Rack Holder for large racks (4 & 5mL vials) holds 3	N/A	4000708	4000708	N/A	4000708*
Large rack for 4 & 5mL vials holds 161	N/A	4000707	4000707	N/A	4000707*
Skin Rack 3 Level (holds 72 skin packets)	4000311	4000311	4000311	4000311*	4000311*
Skin Rack 2 Level (holds 48 skin packets)	4000310	4000310	4000310	4000310*	4000310*
Skin Rack 1 Level (holds 24 skin packets)	4000312	4000312	4000312	4000312*	4000312*



# Thermo Scientific CryoMed Accessories

## Order Information

Product Name	CryoMed	CryoMed	CryoMed	CryoMed	CryoMed
<b>Presses</b>					
Bag press Nexell R4R9953 (Fenwal 4R5461) holds 2 bags	4000314	4000314	4000314	4000314*	4000314*
Bag press Gambro DF-200 holds 2 bags	N/A	4000316	4000316	N/A	4000316*
Bag press Delmed 2030-2 holds 4 bags	N/A	4000317	4000317	N/A	4000317*
Bag press Nexell R4R9953 (Fenwal 4R5461) holds 4 bags	N/A	4000318	4000318	N/A	4000318*
Bag press Gambro DF-200, holds 4 bags	N/A	4000320	4000320	N/A	4000320*
Bag press Gambro DF-700, holds 2 bags	N/A	4000321	4000321	N/A	4000321*
Bag press Nexell R4R9955 (Fenwal 4R5462), holds 2 bags	4000555	4000555	4000555	4000555*	4000555*
<b>Sensors</b>					
Thermocouple sensor for 1.2/2.0mL cryo tube	4000385	4000385	4000385	4000385*	4000385*
Thermocouple sensor for 4.0/5.0mL cryo tube	4000386	4000386	4000386	4000386*	4000386*
Thermocouple sensor ribbon type for bags	4000393	4000393	4000393	4000393*	4000393*
Thermocouple sensor 0.020 sheath straw sample	N/A	N/A	N/A	4000402	4000402
Thermocouple sensor 0.062 sheath vial sample	N/A	N/A	N/A	4000403	4000403
<b> HOLDERS &amp; PLUG FOR IVF APPLICATION</b>					
0.25 / 0.5mL straw holder (holds 4 straws)	N/A	N/A	N/A	4000710	4000710
1.2 / 2.0mL vial holder, (holds 1 vial)	N/A	N/A	N/A	4000711	4000711
1.2 / 2.0 / 4.0 / 5.0mL cane holder (holds 6, 5, 4, 3 canes)	N/A	N/A	N/A	4000714	4000714
Sleeve plug	N/A	N/A	N/A	180255	180255
<b>Thermal Data</b>					
Thermal Printer Paper (5 rolls/package)	4000566	4000566	4000566	4000566	4000566
<b>Regulatory Listing</b>					
	cULus and CE	cULus and CE	cULus and CE	cULus and CE	cULus and CE

### Protocols and on site validations services:

Specification sheets for protocols & field validations deliverables are available upon request

<b>GLP Level Protocols (IQ OQ)</b>	IOQDOCE89003506	IOQDOCE89003506	IOQDOCE89003506	IOQDOCE89003506	IOQDOCE89003506
<b>GMP Level Protocols (IQ OQ PQ)</b>	IOPQDOCE89003506	IOPQDOCE89003506	IOPQDOCE89003506	IOPQDOCE89003506	IOPQDOCE89003506
<b>GLP Level (IQ OQ) Validation Service performed at the customer site</b> (protocol included at no extra charge)	IOQPCKE89003506	IOQPCKE89003506	IOQPCKE89003506	IOQPCKE89003506	IOQPCKE89003506
<b>GMP Level (IQ OQ PQ) Validation Service performed at the customer site</b> (protocol included at no extra charge)	IOPQPCKE89003506	IOPQPCKE89003506	IOPQPCKE89003506	IOPQPCKE89003506	IOPQPCKE89003506

\*These accessories can only be used when top loading cane vial and straw holders are not in use

# Thermo Scientific CryoPlus LN<sub>2</sub> Storage Systems

Our CryoPlus LN<sub>2</sub> storage systems provide precise and accurate control over all parameters without complicated programming. Storage capacities of up to 38,500 vials (2.0mL) make the most of your laboratory storage space.

## Microprocessor Control

- Precise liquid level control over 16 parameters; with autofill system
- Control panel is mounted on the top of the unit for convenient access and easy touchpad programming
- Digital temperature display sensor is located under the lid; this indicates the highest temperature reading inside the tank
- 24 tricolor LEDs continuously display actual liquid nitrogen level and high-level/low-level setpoints
- Remote alarm contacts for in-house remote alarms or connection to a Sensaphone® Telephone Dialing System

## Standard Accessories

- CryoPlus 1 model has 0.5" 45° flare, 4' (1.2m) flexible hose
- CryoPlus 2, 3 and 4 come with 0.5" 45° flare, 6' (1.8m) flexible hose

## Optional Accessories

- A complete offering of racks including vertical, square and arrowhead options to maximize storage space
- Choose from cardboard, polycarbonate or stainless steel cryo boxes
- Sensaphone® Telephone Dialing System for added peace of mind



# Thermo Scientific CryoPlus

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
Model No. (100-120V, 50/60 Hz)	7400	7402	7404	7406
Model No. (200-230V, 50/60 Hz)	7401	7403	7405	7407
<b>Selection Guide</b>				
Application	Sample Storage	Sample Storage	Sample Storage	Sample Storage
Storage Type	AutoFill Vessel / Racks, Frames & Canisters	AutoFill Vessel / Racks, Frames & Canisters	AutoFill Vessel / Racks, Frames & Canisters	AutoFill Vessel / Racks, Frames & Canisters
LN <sub>2</sub> Capacity	90 Liters	200 Liters	340 Liters	552 Liters
Static Evaporation Rate – <i>See footnote (1)</i>	3 Liters/Day	5 Liters/Day	8 Liters/Day	10 Liters/Day
Static Holding Time – <i>See footnote (1)</i>	30 Days	40 Days	42.5 Days	55 Days
Tank Diameter	16 inch / 40.6cm	24 inch / 61cm	31 inch / 78.7cm	39.5 inch / 100.3cm
Interior Tank Height	27.5 inch / 69.9cm	27.5 inch / 69.9cm	27.5 inch / 69.9cm	27.5 inch / 69.9cm
<b>Maximum System Capability</b>				
Vial Capacity 2mL	6,318 with arrowhead rack no. 4000044	13,000 with square rack no. 4000006 or vertical rack no. 4000012	24,000 with vertical rack no. 4000012	38,500 with vertical rack no. 4000012
Vial Capacity 4mL	3,888 with arrowhead rack no. 4000104	7,920 with square rack no. 4000008	13,464 with square rack no. 4000008	24,552 with square rack no. 4000008
Vial Capacity 5mL	3,402 with arrowhead rack no. 4000043	6,930 with square rack no. 4000010	11,781 with square rack no. 4000010	21,483 with square rack no. 4000010
Bag Capacity 50mL, Fenwal 4R9951	238 with 7 place frame no. 4000670	630 with 7 place frame no. 4000670	1,078 with 7 place frame no. 4000670	1,792 with 7 place frame no. 4000670
Bag Capacity 250mL bag, Fenwal 4R5461	112 with 4 place frame no. 4000371	256 with 4 place frame no. 4000371	448 with 4 place frame no. 4000371	696 with 4 place frame no. 4000371
Bag Capacity 500mL bag, Fenwal 4R5462	88 with 4 place frame no. 4000372	200 with 4 place frame no. 4000372	328 with 4 place frame no. 4000372	608 with 4 place frame no. 4000372
Bag Capacity 500mL bag, Gambro DF-200	76 with 4 place frame no. 4000368	160 with 4 place frame no. 4000368	272 with 4 place frame no. 4000368	464 with 4 place frame no. 4000368
Bag Capacity 700mL bag, Gambro DF-700	40 with 4 place frame no. 4000369	104 with 4 place frame no. 4000369	176 with 4 place frame no. 4000369	N/A
Cane Capacity	800 with Canister Cane Storage square rack no. 4000379	2,000 with Canister Cane Storage square rack no. 4000379	3,400 with Canister Cane Storage square rack no. 4000379	6,200 with Canister Cane Storage square rack no. 4000379
<b>Maximum Organizational Capability</b>				
Number of square racks	4	10	17	31
Number of vertical racks	11	26	48	77
Number of arrowhead racks	6	N/A	N/A	N/A
Number of frames (50mL bag, Fenwal 4R9951)	34	90	154	256
Number of frames (250mL bag, Fenwal 4R5461)	28	64	112	174
Number of frames (500mL bag, Fenwal 4R5462)	22	50	82	152
Number of frames (500mL bag, Gambro DF-200)	19	40	68	116
Number of frames (700mL bag, Gambro DF-700)	10	26	44	N/A

Footnote:

(1) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.

# Thermo Scientific CryoPlus

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
<b>Product Exterior Dimension</b>				
Width x Height x Depth	21.5 x 41 x 26 inches 54.6 x 104.1 x 66cm	28.5 x 41 x 34 inches 72.4 x 104.1 x 86.4cm	34.5 x 41 x 41.5 inches 87.6 x 104.1 x 105.4cm	43.5 x 47 x 50 inches 110.5 x 119.4 x 127cm
<b>Product Weight</b>				
Empty	214 lbs. / 97.1 kg	325 lbs. / 147.4 kg	416 lbs. / 188.7 kg	820 lbs. / 371.9 kg
Full	354 lbs. / 160.6 kg	680 lbs. / 308.4 kg	1021 lbs. / 463.1 kg	1620 lbs. / 734.8 kg
Packaged / Shipping	260 lbs. / 117.9 kg	480 lbs. / 217.7 kg	550 lbs. / 249 kg	1070 lbs. / 485.3 kg
<b>Installation information</b>				
Product clearance	Add 5 inches (12.7cm) to F-B for utilities & lid opening	Add 5 inches (12.7cm) to F-B for utilities & lid opening	Add 5 inches (12.7cm) to F-B for utilities & lid opening	Add 5 inches (12.7cm) to F-B for utilities & lid opening Total height with lid open is 97 inches (246.38cm)
Utility connection	0.5 inches, 45 degree flare, 4ft (1.2m) SS flexible hose	0.5 inches, 45 degree flare, 6ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6ft (1.8m) SS flexible hose	0.5 inches, 45 degree flare, 6ft (1.8m) SS flexible hose
Electrical 120V, 60 Hz	0.5 FLA, operating range 90-132V, NEMA 5-15P plug	0.5 FLA, operating range 90-132V, NEMA 5-15P plug	0.5 FLA, operating range 90-132V, NEMA 5-15P plug	0.5 FLA, operating range 90-132V, NEMA 5-15P plug
Electrical 220V, 50 Hz	0.5 FLA, operating range 180-253V, CEE 7/7 plug	0.5 FLA, operating range 180-253V, CEE 7/7 plug	0.5 FLA, operating range 180-253V, CEE 7/7 plug	0.5 FLA, operating range 180-253V, CEE 7/7 plug
LN <sub>2</sub> supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank	Requires 22 psi low pressure supply tank
<b>Regulatory Listing</b>				
	cULus and CE	cULus and CE	cULus and CE	cULus and CE

## Protocols and on site validations services:

Specification sheets for protocols & field validations deliverables are available upon request

<b>GLP Level Protocols (IQ OQ)</b>	IOQDOCE89003506	IOQDOCE89003506	IOQDOCE89003506	IOQDOCE89003506
<b>GMP Level Protocols (IQ OQ PQ)</b>	IOPQDOCE89003506	IOPQDOCE89003506	IOPQDOCE89003506	IOPQDOCE89003506
<b>GLP Level (IQ OQ) Validation Services performed at the customer site</b> (protocol included at no extra charge)	IOQPCKE89003506	IOQPCKE89003506	IOQPCKE89003506	IOQPCKE89003506
<b>GMP Level (IQ OQ PQ) Validation Services performed at the customer site</b> (protocol included at no extra charge)	IOPQPCKE89003506	IOPQPCKE89003506	IOPQPCKE89003506	IOPQPCKE89003506



# Thermo Scientific CryoPlus Accessories

- 1 Platform divider
- 2 Vertical racks
- 3 Arrowhead racks
- 4 Square racks with stainless steel boxes
- 5 Canister cane storage racks
- 6 Cassettes
- 7 Platform riser
- 8 Frames
- 9 Square vertical racks with boxes
- 10 Square mini vertical rack with boxes





# Thermo Scientific CryoPlus Accessories

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
<b>Racks</b>				
<b>Vertical</b>				
<b>Liquid Phase</b>				
2mL, 5 cardboard boxes (100 cell divider)	4000012	4000012	4000012	4000012
2mL, 12 cardboard boxes (25 cell divider). Mini Rack.	4000260	4000260	4000260	4000260
<b>Vapor Phase</b>				
2mL, 4 cardboard boxes (100 cell divider)	4000011	4000011	4000011	4000011
<b>Square</b>				
<b>Liquid Phase</b>				
2mL includes 12 cardboard boxes with a 100 cell divider	4000042	4000042	4000042	4000042
2mL, 13 cardboard boxes (100 cell divider) – <i>See footnote (2)</i>	4000006	4000006	4000006	4000006
2mL, 13 Stainless Steel boxes (100 cell divider)	4000007	4000007	4000007	4000007
4mL, 8 cardboard boxes (100 cell divider)	4000008	4000008	4000008	4000008
4mL, 8 Stainless Steel boxes (100 cell divider)	4000009	4000009	4000009	4000009
5mL, 7 cardboard boxes (100 cell divider)	4000010	4000010	4000010	4000010
<b>Vapor Phase</b>				
2mL, 11 cardboard boxes (100 cell divider)	4000001	4000001	4000001	4000001
2mL, 11 Stainless Steel boxes (100 cell divider)	4000002	4000002	4000002	4000002
4mL, 7 cardboard boxes (100 cell divider)	4000003	4000003	4000003	4000003
4mL, 7 Stainless Steel boxes (100 cell divider)	4000004	4000004	4000004	4000004
5mL, 6 cardboard boxes (100 cell divider)	4000005	4000005	4000005	4000005
<b>Canister Cane Storage</b>				
<b>Vapor</b>				
2mL, 4mL, 5mL vial and straw canes includes 8 canisters	4000379	4000379	4000379	4000379
<b>Arrowhead</b>				
<b>Liquid</b>				
2mL, 12 cardboard boxes (81 cell divider)	4000112	N/A	N/A	N/A
2mL, 13 cardboard boxes (81 cell divider)	4000044	N/A	N/A	N/A
2mL, 12 Stainless Steel boxes (81 cell divider)	4000113	N/A	N/A	N/A
4mL, 8 cardboard boxes (81 cell divider)	4000104	N/A	N/A	N/A
4mL, 8 Stainless Steel boxes (81 cell divider)	4000105	N/A	N/A	N/A
5mL, 7 cardboard boxes (81 cell divider)	4000043	N/A	N/A	N/A
<b>Vapor</b>				
2mL, 11 cardboard boxes (81 cell divider)	4000110	N/A	N/A	N/A
2mL, 11 Stainless Steel boxes (81 cell divider)	4000111	N/A	N/A	N/A
2mL, 10 cardboard boxes (81 cell divider)	4000108	N/A	N/A	N/A
<b>Boxes</b>				
<b>Cardboard</b>				
<b>Vertical</b>				
2mL (with a 100 cell divider)	4000014	4000014	4000014	4000014
<b>Square</b>				
2mL (with a 100 cell divider)	4000014	4000014	4000014	4000014
4mL (with a 100 cell divider)	4000015	4000015	4000015	4000015
5mL (with a 100 cell divider)	4000015	4000015	4000015	4000015
<b>Arrowhead</b>				
2mL (Does not include a 81 cell divider)	4000193	4000193	4000193	4000193
4mL (Does not include a 81 cell divider)	4000195	4000195	4000195	4000195
5mL (Does not include a 81 cell divider)	4000195	4000195	4000195	4000195

Footnote:

(2) This rack will not accommodate polycarbonate boxes. Use 4000042 instead.

# Thermo Scientific CryoPlus Accessories

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
<b>Polycarbonate</b>				
<b>Vertical</b>				
2mL (100 cell division)	820010	820010	820010	820010
2mL (81 cell division)	820011	820011	820011	820011
<b>Square</b>				
2mL (100 cell division)	820010	820010	820010	820010
2mL (81 cell division)	820011	820011	820011	820011
4mL (81 cell division)	820013	820013	820013	820013
<b>Stainless Steel</b>				
<b>Square</b>				
2mL (Does not include a 100 cell divider)	4000238	4000238	4000238	4000238
4mL (Does not include a 100 cell divider)	4000239	4000239	4000239	4000239
<b>Arrowhead</b>				
2mL (Does not include a 81 cell divider)	4000181	N/A	N/A	N/A
<b>Cell Dividers</b>				
Square box 100 – <i>See footnote (3)</i>	4000013	4000013	4000013	4000013
Arrowhead box 81 – <i>See footnote (3)</i>	4000181	4000181	4000181	4000181
<b>Frames</b>				
<b>Liquid</b>				
Bag Capacity 50mL, Fenwal 4R9951, holds 7 cassettes	4000670	4000670	4000670	4000670
Bag Capacity 250mL bag, Fenwal 4R5461, holds 4 cassettes	4000371	4000371	4000371	4000371
Bag Capacity 500mL bag, Fenwal 4R5462, holds 4 cassettes	4000372	4000372	4000372	4000372
Bag Capacity 500mL bag, Gambro DF-200, holds 4 cassettes	4000368	4000368	4000368	4000368
Bag Capacity 700mL bag, Gambro DF-700, holds 4 cassettes	4000369	4000369	4000369	N/A
<b>Vapor</b>				
Bag Capacity 50mL, Fenwal 4R9951, holds 6 cassettes	4000660	4000660	4000660	4000660
Bag Capacity 250mL bag, Fenwal 4R5461, holds 4 cassettes	4000371	4000371	4000371	4000371
Bag Capacity 500mL bag, Fenwal 4R5462, holds 4 cassettes	4000372	4000372	4000372	4000372
<b>Cassettes</b>				
Bag Capacity 50mL, Fenwal 4R9951 swing arm canister	4000610	4000610	4000610	4000610
Bag Capacity 250mL bag, Fenwal 4R5461 sliding canister	4000335	4000335	4000335	4000335
Bag Capacity 500mL bag, Fenwal 4R5462 sliding canister	4000336	4000336	4000336	4000336
Bag Capacity 500mL bag, Gambro DF-200 sliding canister	4000332	4000332	4000332	4000332
Bag Capacity 500mL bag, Gambro DF-200 swing arm canister	4000356	4000356	4000356	4000356
Bag Capacity 700mL bag, Gambro DF-700 sliding canister	4000333	4000333	4000333	4000333
Bag Capacity 700mL bag, Gambro DF-700 swing arm canister	4000357	4000357	4000357	4000357

Footnote:

(3) All cell divider material is cardboard for both cardboard and stainless steel box application.

# Thermo Scientific CryoPlus Accessories

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
<b>Platform Dividers</b>				
50mL Fenwal 4R9951 for frames and canisters	4000616	4000624	4000631	4000368
250mL Fenwal 4R5461 for frames and canisters	N/A	4000075	4000050	4000053
500mL Fenwal 4R5462 for frames and canisters	N/A	4000076	4000051	4000054
500mL Gambro DF-200 for frames and canisters	N/A	N/A	4000047	4000052
700mL Gambro DF-700 for frames and canisters	N/A	N/A	4000048	N/A
<b>Platform Risers (Vapor Phase only)</b>				
<b>Rack</b>				
<b>Vertical</b>				
5.0 inch riser for rack part # 4000011	4000061	4000061	4000064	4000067
<b>Square</b>				
3.5 inch riser for rack part # 4000001	4000060	4000060	4000063	4000066
3.5 inch riser for rack part # 4000002	4000060	4000060	4000063	4000066
4.0 inch riser for rack part # 4000005	4000056	4000062	4000065	4000068
5.0 inch riser for rack part # 4000003	4000061	4000061	4000064	4000067
5.0 inch riser for rack part # 4000004	4000061	4000061	4000064	4000067
<b>SUC-1 (Canister Cane Storage)</b>				
3.5 inch riser for rack part # 4000379	4000060	4000060	4000063	4000066
<b>Arrowhead</b>				
4.0 inch riser for rack part # 4000097	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000100	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000101	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000108	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000109	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000110	4000056	N/A	N/A	N/A
4.0 inch riser for rack part # 4000111	4000056	N/A	N/A	N/A
<b>Frames</b>				
Bag Capacity 50mL , Fenwal 4R9951, 6 places for cassettes	4000060	4000060	4000063	4000066
Bag Capacity 250mL bag, Fenwal 4R5461, 4 places for cassettes	4000060	4000060	4000063	4000066
Bag Capacity 500mL bag, Fenwal 4R5462, 4 places for cassettes	4000060	4000060	4000063	4000066
<b>Thermal Data</b>				
120V, 60 Hz Printer with cable assembly and RS-232 connector kit	4000565	4000565	4000565	4000565
220V, 50Hz Printer with cable assembly and RS-232 connector kit	4000665	4000665	4000665	4000665
Thermal Printer Paper (5 rolls/package)	4000566	4000566	4000566	4000566
<b>Recorder Kit</b>				
120, 60 Hz with 6" diameter circular chart, 7 day temperature recorder, pen and chart drive (top, left and right side mount)	201175	201175	201175	201175
220, 50 Hz with 6" diameter circular chart, 7 day temperature recorder, pen and chart drive (top, left and right side mount)	201280	201280	201280	201280
Replacement Felt Tip Pen	245231	245231	245231	245231
<b>Sensaphone® Telephone Dialing Systems</b>				
4 pre-programmed numbers, 120V 60 Hz	400047	400047	400047	400047
4 pre-programmed numbers, 220V 50 Hz	400182*	400182*	400182*	400182*
8 pre-programmed numbers, 120V 60Hz	400134	400134	400134	400134
8 pre-programmed numbers, 220V 50Hz	400183*	400183*	400183*	400183*
RJ-11 Remote Alarm Cable Kit used to connect remote alarm to equipment	400142	400142	400142	400142

\*Not CE marked

# Thermo Scientific CryoPlus Accessories

## Order Information

Product Name	CryoPlus 1	CryoPlus 2	CryoPlus 3	CryoPlus 4
<b>Hot Gas Bypass</b>				
120 V factory installed	195021	195021	195021	195021
220 V factory installed	195023	195023	195023	195023
120 V field installed	195700	195700	195700	195700
220 V field installed	195701	195701	195701	195701
<b>Misc.</b>				
T-Valve assembly	4000290	4000290	4000290	4000290



## Thermo Scientific BioCane Canister and Cane Systems

Our BioCane canister and cane systems cost-effectively store cell, tissues or other biological samples. Available in four sizes, the system can safely hold samples for up to seven months without replenishing LN<sub>2</sub>.



- Models include six stainless-steel canisters to accommodate vials (eight with BioCane 73 – Shown here with optional hinged handle.)
- Canisters are color-coded to simplify sample identification
- Durable aluminum construction and vacuum insulation
- Narrow-mouth design minimizes LN<sub>2</sub> evaporation
- Secure locking clasp



# Thermo Scientific BioCane

## Order Information

Product Name	BioCane 20	BioCane 34	BioCane 47	BioCane 73
Model No.	CK509X2	CK509X3	CK509X4	CK509X6
Application	Portable Sample Storage Vessel	Portable Sample Storage Vessel	Portable Sample Storage Vessel	Portable Sample Storage Vessel
Storage Type	Manual Fill / Canister	Manual Fill / Canister	Manual Fill / Canister	Manual Fill / Canister
LN <sub>2</sub> Capacity	20.5 Liters	34.8 Liters	47.4 Liters	73 Liters
Static Evaporation Rate – <i>See footnote (1)</i>	0.1 Liters / Day	0.18 Liters / Day	0.4 Liters / Day	0.6 Liters / Day
Static Holding Time	227 Days	193 Days	121 Days	121 Days
Neck Diameter	2.0 inch / 5.1cm	3.5 inch / 8.8cm	5.0 inch / 12.7cm	6.0 inch / 15.2cm
Number of Canisters (included)	6	6	6	8
Canister Dimensions	11" L x 1.5" Dia (27.9 x 3.8cm)	11" L x 2.8" Dia (27.9 x 7.1cm)	11" L x 4" Dia (27.9 x 10.2cm)	11" L x 5" Dia (27.9 x 12.7cm)
<b>Maximum System Capability</b>				
Number of Canes per canister	5	20	42	60
Vial Capacity 1.2mL (6 per cane)	180	720	1,512	2,880
Vial Capacity 2mL (5 per cane)	150	600	1,260	2,400
Vial Capacity 4mL (3 per cane)	90	360	756	1,440
Vial Capacity 5mL (2 per cane)	60	240	504	960
Straw Capacity (10 per cane)	300	1,200	2,520	4,800
<b>Vessel Exterior Dimension</b>				
Diameter x Height	14.5 x 25.7 inch 36.8 x 65.3cm	18.2 x 26.6 inch 46.2 x 67.6cm	20.0 x 26.5 inch 50.8 x 67.3cm	22.0 x 27.3 inch 55.9 x 69.3cm
<b>Product Weight</b>				
Empty	26 lbs. / 11.8 kg	34 lbs. / 15.4 kg	39 lbs. / 17.7 kg	52 lbs. / 23.6 kg
Full	63 lbs. / 28.2 kg	96 lbs. / 43.5 kg	120 lbs. / 54.5 kg	192 lbs. / 87.3 kg
Packaged / Shipping	29 lbs. / 13.2 kg	41 lbs. / 18.6 kg	47 lbs. / 21.3 kg	95 lbs. / 43.2 kg
<b>Accessory</b>				
<b>Vials</b>				
1mL, case of 500	AY509X32	AY509X32	AY509X32	AY509X32
Cryogenic Vials(E), case/500, 1.2mL, 13.5mm O.K., 38.1mm H	AY509X13	AY509X13	AY509X13	AY509X13
1.5mL, case of 500	AY509X33	AY509X33	AY509X33	AY509X33
Cryogenic Vials(E), case/500, 2.0mL, 13.5mm O.K., 48.3mm H	AY509X12	AY509X12	AY509X12	AY509X12
<b>Misc.</b>				
Low Level Alarm	8130	8130	8130	8130
Wheeled Accessory Cart (5 inches high)	AY509X9	AY509X9	AY509X9	AY509X1
Square Rack Option interchangeable with canisters (includes 5 cardboard boxes, each box with 40 cell dividers) – <i>See footnote (2)</i>	N/A	N/A	195555	N/A
Hinge Handle Canister	N/A	N/A	N/A	4000562
One Cryo Cane, 1.2mL – 6 Ampule	4000211	4000211	4000211	4000211
CryoSleeve (100 per case, length 273mm / 10.75 inches)	AY509X21	AY509X21	AY509X21	AY509X21
<b>Regulatory Listing</b>				
	CE	CE	CE	CE

**Footnotes:**

(1) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.

(2) 1.2 / 2mL vial capacity with each square rack is 125 vials

## Thermo Scientific Locator PLUS Rack and Box Systems

Available with or without ultrasonic level monitor, our Locator PLUS indexed rack and box systems allow quick, efficient sample retrieval and offer cost-effective maximum storage capacity (up to 6,000 samples) combined with minimum liquid nitrogen consumption.



- Outstanding temperature uniformity: samples are stored below  $-180^{\circ}\text{C}$  even when less than 2" (5cm) of liquid nitrogen remains in the vessel
- Ultrasonic Level Monitor safeguards irreplaceable samples with minimal liquid nitrogen evaporation and conduction
- Monitor provides continuous LED readout of liquid nitrogen level in 1/8 increments
- Optional alarm sounds when nitrogen level falls below safe range
- Advanced vacuum insulation minimizes liquid nitrogen evaporation and reduces operating costs
- Secure locking clasp prevents unauthorized entry
- Includes stainless-steel racks designed for use with 2" (5cm) Nalgene cryogenic boxes (larger racks available for 5.0mL ampoules in Locator Jr. PLUS and Locator 4 PLUS)



# Thermo Scientific Locator PLUS

## Order Information

Product Name	Locator Jr. PLUS	Locator 4 PLUS	Locator 6 PLUS	Locator 8 PLUS
Model No. (does not include level monitor)	CY50925-70	CY50935-70	CY50985-70	CY50945-70
Model No. (With factory installed level monitor 100-240V) – See footnote (1)	CY509106	CY509108	CY509109	CY509111
<b>Selection Guide</b>				
Application	Portable Sample Storage Vessel	Portable Sample Storage Vessel	Portable Sample Storage Vessel	Portable Sample Storage Vessel
Storage Type	Manual Fill / Rack & Box	Manual Fill / Rack & Box	Manual Fill / Rack & Box	Manual Fill / Rack & Box
LN <sub>2</sub> Capacity	71 Liters	121 Liters	184 Liters	121 Liters
Neck Diameter	8.5 inch / 21.5cm	8.5 inch / 21.5cm	8.5 inch / 21.5cm	6.0 inch / 15.2cm
Static Evaporation Rate – See footnote (2)	0.85 Liters / Day	0.99 Liters / Day	0.99 Liters / Day	0.60 Liters / Day
Static Holding Time	83 Days	122 Days	185 Days	201 Days
Number of 1.2 / 2mL vial racks	4	4	6	8
<b>Maximum System Capability</b>				
Number of 2mL vial boxes per rack	5	10	10	10
Number of 2mL vials per box	100	100	100	25
Vial Capacity 2mL	2,000	4,000	6,000	2,000
Vial Capacity 5mL	648	1,620	2,430	N/A
<b>Vessel Exterior Dimension (Add 2 inches for lid &amp; handle)</b>				
Diameter x Height	22.0 x 26.9 inch 55.8 x 68.3cm	22.0 x 37.5 inch 55.8 x 95.3cm	26.0 x 37.5 inch 66.0 x 95.3cm	22.0 x 37.5 inch 55.8 x 95.3cm
<b>Product Weight</b>				
Empty – See footnote (3)	59.4 lbs. / 27 kg	82.5 lbs. / 37.5 kg	105.3 lbs. / 47.9 kg	81.3 lbs. / 37 kg
Full – See footnote (3)	82 lbs. / 37.3 kg	133.5 lbs. / 60.7 kg	180.3 lbs. / 82 kg	132 lbs. / 60 kg
Packaged / Shipping	91 lbs. / 41.3 kg	118 lbs. / 53.5 kg	160 lbs. / 72.6 kg	115 lbs. / 52.2 kg
<b>Accessories</b>				
<b>Racks</b>				
5.0mL vial Rack , does not include boxes	HR509X19A-70	HR509X20A-70	HR509X32A-70	N/A
<b>Boxes</b>				
2" height: 1.0 & 1.5mL Nalgene, 100 vial per box, case of 10	CS509X24	CS509X24	CS509X24	N/A
2" height: 2mL Nalgene, 25 vial per box, case of 80	N/A	N/A	N/A	CS509X3
2" height: 2mL Nalgene, 81 vial per box, case of 40	CS509X4	CS509X4	CS509X4	N/A
2" height: 2mL Nalgene, 81 vial per box, case of 20	CS509X5	CS509X5	CS509X5	N/A
4" height: 5mL Nalgene, 81 vial per box, each	CS509X10	CS509X10	CS509X10	N/A
<b>Vials</b>				
1mL, case of 500	AY509X32	AY509X32	AY509X32	AY509X32
Cryogenic Vials(E), case/500, 1.2mL, 13.5mm O.K., 38.1mm H	AY509X13	AY509X13	AY509X13	AY509X13
1.5mL, case of 500	AY509X33	AY509X33	AY509X33	AY509X33
Cryogenic Vials(E), case/500, 2.0mL, 13.5mm O.K., 48.3mm H	AY509X12	AY509X12	AY509X12	AY509X12
<b>Misc.</b>				
Low Level Alarm (stand alone)	8130	8130	8130	8130
Wheeled Accessory Cart (5 inches high)	AY509X1	AY509X1	AY509X1-70	AY509X1
Customer installed level monitor 100-240V	CN509X1-70	CN509X4-70	CN509X11-70	CN509X7-70
Log Book	1950338	1950338	1950338	1950338
CryoClaw	AY509X18	AY509X18	AY509X18	AY509X18
Replacement Suction Cups (2) for CryoClaw	AY509X19	AY509X19	AY509X19	AY509X19
<b>Regulatory Listing</b>				
	cCSAus and CE	cCSAus and CE	cCSAus and CE	cCSAus and CE

### Footnotes:

(1) For China models use CY509106CN for Locator Jr. PLUS and use CY509108CN for Locator 4 PLUS and use CY509109CN for Locator 6 PLUS and use CY509111CN for Locator 8 PLUS.

(2) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.

(3) Add 1.6 lbs. / 0.73 kg for units with level monitor.

## Thermo Scientific Locator Rack and Box Systems

Our Locator rack and box systems simplify sample storage and retrieval with unique hanging rack and gridded box design, advanced vacuum insulation, unmatched temperature uniformity and an innovative liquid nitrogen monitor.

- Outstanding temperature uniformity: samples are stored below  $-180^{\circ}\text{C}$  even when less than 2" (5cm) of liquid nitrogen remains in the vessel
- Ultrasonic Level Monitor safeguards irreplaceable samples with minimal liquid nitrogen evaporation and conduction
- Optional monitor provides continuous LED readout of liquid nitrogen level; activates visual and audible alarms when level falls below safe range of approximately 1" (2.5cm)
- Optional alarm also alerts operator in the event of excessive liquid nitrogen loss
- Secure locking clasp prevents unauthorized entry
- Includes stainless-steel racks designed for use with 2" (5cm) Nalgene cryogenic boxes (larger racks available for 5.0mL ampoules in Locator Jr. and Locator 4)



# Thermo Scientific Locator

## Order Information

Product Name	Locator Jr.	Locator 4	Locator 8
Model No. (does not include level monitor)	CY50925	CY50935	CY50945
Model No. (With factory installed level monitor 100-240V) – <a href="#">See footnote (1)</a>	CY509105	CY509107	CY509110
<b>Selection Guide</b>			
Application	Portable Sample Storage Vessel	Portable Sample Storage Vessel	Portable Sample Storage Vessel
Storage Type	Manual Fill / Rack & Box	Manual Fill / Rack & Box	Manual Fill / Rack & Box
LN <sub>2</sub> Capacity	60.00 Liters	111.0 Liters	111.0 Liters
Neck Diameter	8.5 inch / 21.5cm	8.5 inch / 21.5cm	6.0 inch / 15.2cm
Static Evaporation Rate – <a href="#">See footnote (2)</a>	0.85 Liters / Day	0.99 Liters / Day	0.6 Liters / Day
Static Holding Time	70 Days	112 Days	185 Days
2mL vial racks standard (boxes not included)	4	4	8
<b>Maximum System Capability</b>			
Number of 1.2 / 2mL vial boxes per rack	4	9	9
Number of 1.2 / 2mL vials per box	100	100	25
Vial Capacity 1.2 / 2mL	1,600	3,600	1,800
Vial Capacity 5mL	648	1,620	N/A
<b>Vessel Exterior Dimension (Add 2 inches for lid &amp; handle)</b>			
Diameter x Height	22.0 x 24.5 inch 55.8 x 62.2cm	22.0 x 35.5 inch 55.8 x 90.2cm	22.0 x 35.5 inch 55.8 x 95.3cm
<b>Product Weight</b>			
Empty – <a href="#">See footnote (3)</a>	54.1 lbs. / 24.6 kg	77.8 lbs. / 35.4 kg	77.8 lbs. / 35.4 kg
Full – <a href="#">See footnote (3)</a>	76.5 lbs. / 34.8 kg	128.5 lbs. / 58.4 kg	128.5 lbs. / 58.4 kg
Packaged / Shipping	90 lbs. / 40.8 kg	115 lbs. / 52.2 kg	117 lbs. / 53.1 kg
<b>Accessories</b>			
<b>Racks</b>			
5.0mL vial Rack, does not include boxes	HR509X19A	HR509X20A	N/A
<b>Boxes</b>			
2" height: 1.0 & 1.5mL Nalgene, 100 vial per box, case of 10	CS509X24	CS509X24	N/A
2" height: 2mL Nalgene, 25 vial per box, case of 80	N/A	N/A	CS509X3
2" height: 2mL Nalgene, 81 vial per box, case of 40	CS509X4	CS509X4	N/A
2" height: 2mL Nalgene, 81 vial per box, case of 20	CS509X5	CS509X5	N/A
4" height: 5mL Nalgene, 81 vial per box, each	CS509X10	CS509X10	N/A
<b>Vials</b>			
1mL, case of 500	AY509X32	AY509X32	AY509X32
Cryogenic Vials(E), case/500, 1.2mL, 13.5mm O.K., 38.1mm H	AY509X13	AY509X13	AY509X13
1.5mL, case of 500	AY509X33	AY509X33	AY509X33
Cryogenic Vials(E), case/500, 2.0mL, 13.5mm O.K., 48.3mm H	AY509X12	AY509X12	AY509X12
<b>Misc.</b>			
Low Level Alarm (stand alone)	8130	8130	8130
Wheeled Accessory Cart (5 inches high)	AY509X1	AY509X1	AY509X1
Logbook	1950338	1950338	1950338
Customer installed level monitor 100-240V – <a href="#">See footnote (4)</a>	CN509X1	CN509X4	CN509X7
CryoClaw	AY509X18	AY509X18	AY509X18
Replacement Suction Cups (2) for CryoClaw	AY509X19	AY509X19	AY509X19
<b>Regulatory Listing</b>			
	cCSAus and CE	cCSAus and CE	cCSAus and CE

Footnotes:

(1) For China models use CY509105CN for Locator Jr. and use CY509107CN for Locator 4 and use CY509110CN for Locator 8.

(2) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.

(3) Add 1.6 lbs. / 0.73 kg for units with level monitor.

(4) For China models use CN509X1CN for Locator Jr. and use CN509X4CN for Locator 4 and use CN509X7CN for Locator 8.



## Thermo Scientific Thermo Series Liquid Nitrogen Transfer Vessels

Designed for storing and dispensing small amounts of liquid nitrogen, our Thermo Series includes four models with capacities from 5 to 32L.



- Designed to bring liquid nitrogen to other cryo vessels
- Lightweight aluminum dewars assure low-static evaporation rates
- Compact Thermo 5 and 10 dewars feature a convenient handle for pouring and for use in applications where only small quantities of liquid nitrogen are needed
- Thermo 10, 20 and 30 can be fitted with self-pressurized withdrawal accessory devices to easily dispense LN<sub>2</sub> without pouring
- Optional withdrawal device, 12mL dipper and wheeled accessory cart

# Thermo Scientific Thermo Series

## Order Information

Product Name	Thermo 5	Thermo 10	Thermo 20	Thermo 30
Model No.	TY509X1	TY509X2	TY509X3	TY509X4
<b>Selection Guide</b>				
Application	Transfer Vessel	Transfer Vessel	Transfer Vessel	Transfer Vessel
Storage Type	Manual Fill	Manual Fill	Manual Fill	Manual Fill
LN <sub>2</sub> Capacity	5.0 Liters	10.0 Liters	20.0 Liters	32.0 Liters
Neck Diameter	2.2 inch / 5.6cm	2.2 inch / 5.6cm	2.0 inch / 5.0cm	2.5 inch / 6.4cm
Static Evaporation Rate – <i>See footnote (1)</i>	0.15 Liters / Day	0.18 Liters / Day	0.18 Liters / Day	0.22 Liters / Day
Static Holding Time	33.3 Days	55.6 Days	111 Days	145 Days
<b>Vessel Exterior Dimension</b>				
Diameter x Height	8.8 x 18.2 inch 22.4 x 46.2cm	10.3 x 21.5 inch 26.2 x 54.6cm	14.5 x 24.7 inch 36.8 x 62.7cm	17.0 x 24.1 inch 43.2 x 61.2cm
<b>Product Weight</b>				
Empty	8 lbs. / 3.6 kg	12 lbs. / 5.5 kg	19 lbs. / 8.6 kg	25 lbs. / 11.4 kg
Full	17 lbs. / 7.7 kg	31 lbs. / 14.1 kg	55 lbs. / 25 kg	82 lbs. / 37.3 kg
Shipping	12 lbs. / 5.5 kg	14 lbs. / 6.4 kg	24 lbs. / 10.9 kg	30 lbs. / 13.6 kg
<b>Accessories</b>				
Withdrawal Device	N/A	AY509X5	AY509X4	AY509X3
12mL Dipper	AY509X6	AY509X6	AY509X6	AY509X6
Wheeled Accessory Cart (5 inches high)	N/A	N/A	AY509X9	AY509X9

**Footnotes:**

(1) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.



# Thermo Scientific Arctic Express Storage Systems

Our Arctic Express and Arctic Express Dual systems protect samples during shipment and storage. Featuring excellent flexibility and safety features, these systems can be used as dry shippers or laboratory cryo storage vessels.



## Arctic Express Dual Shipper Storage Systems

- When filled with liquid nitrogen and placed in the laboratory, Arctic Express dual shippers can be used as a “Canister and Cane” storage system indefinitely with static holding times of up to 125 days
- Dual shippers hold six numbered, color-coded, stainless steel cans (included) which accommodate canes that hold ampoules
- Hard-shell shipping container comes standard for both Arctic Express and Dual Shippers

## Arctic Express IATA-Shipper Transport Systems

- Worldwide shipment of infectious materials with the highest safety and security; approved by UN and IATA

- Two week holding time preserves sample integrity
- Lockable cover with internal security compartment provides protection and sample isolation
- Aluminum container with handle holds internal security compartment

## Arctic Express Cryogenic Shipping Containers

- Innovative material absorbs liquid nitrogen to prevent spillage during shipment
- 14- and 21-day liquid nitrogen holding times allow specimens to be shipped safely
- Durable construction and sturdy base allow dry shipper to withstand rough handling
- Lockable lid prevents unauthorized entry
- Easily transported via most common carriers
- Lightweight aluminum design and convenient pail-style handle

# Thermo Scientific Arctic Express

## Order Information

Product Name	Arctic Express 5	Arctic Express 10	Arctic Express 20	Arctic Express IATA Approved
Model No.	CY50915	CY50905	CY50910	CY50920
<b>Selection Guide</b>				
Application	Dry Shipping Container	Dry Shipping Container	Dry Shipping Container	Dry Shipping Container
Storage Type	Manual Fill / Canister	Manual Fill / Canister	Manual Fill	Manual Fill
LN <sub>2</sub> Capacity	1.5 Liters	4.3 Liters	10.0 Liters	10.0 Liters
Neck Diameter	1.4 inch / 3.5cm	2.0 inch / 5.0cm	8.5 inch / 21.6cm	8.5 inch / 21.6cm
Canister Diameter	1.2 inch / 3.1cm	1.8 inch / 4.6cm	N/A	N/A
Static Evaporation Rate – <i>See footnote (1)</i>	0.19 Liters / Day	0.2 Liters / Day	0.7 Liters / Day	0.7 Liters / Day
Static Holding Time	8 Days	21 Days	14 Days	14 Days
Number of Canisters (included)	1	1	N/A – <i>See footnote (2)</i>	Internal Security Compartment
Canister Dimensions (Length x Diameter)	5 x 1.2 inches (12.7 x 3.0cm)	11 x 1.80 inches (27.9 x 4.6cm)	N/A	N/A
Hard Shell Shipping Container	standard	standard	standard	standard
Shipping dimensions (Diameter x Height)	15 x 24 inches 38.1 x 61cm	15 x 24 inches 38.1 x 61cm	22 x 28 inches 55.9 x 71.1cm	22 x 28 inches 55.9 x 71.1cm
<b>Maximum System Capability</b>				
Number of Canes per canister	3	8	161	N/A
Number of 1.2mL vials per Cane	3	6	6	N/A
Vial Capacity 1.2mL	9	48	966	480
Vial Capacity 2mL	9	48	966	384
Vial Capacity 4mL	6	24	483	288
Vial Capacity 5mL	3	16	322	N/A
Straw Capacity	15	120	1,610	N/A
<b>Vessel Exterior Dimension</b>				
Diameter x Height	7.3 x 13.5 inch 18.5 x 34.3cm	8.7 x 19.4 inch 22.1 x 49.3cm	15.0 x 23.0 inch 38.1 x 58.4cm	15.0 x 23.0 inch 38.1 x 58.4cm
<b>Product Weight</b>				
Empty	6 lbs. / 2.7 kg	13 lbs. / 5.9 kg	30 lbs. / 13.6 kg	36 lbs. / 16.4 kg
Fully Absorbed	8.8 lbs. / 4 kg	20.0 lbs. / 9.1 kg	47 lbs. / 21.4 kg	53 lbs. / 24.1 kg
Packaged / Shipping	24 lbs. / 10.9 kg	29 lbs. / 13.2 kg	52 lbs. / 23.6 kg	58 lbs. / 26.4 kg
<b>Regulatory Listing</b>				
	CE	CE	CE	CE

Footnotes:

(1) Static evaporation rates are based on new container performance with no lid openings and no product loads. Actual working performance may vary with individual applications.

(2) Shipments of bone marrow, heart valves, or other large samples require specific package size to determine capacity.



# Thermo Scientific Arctic Express Dual

## Order Information

Product Name	Arctic Express Dual 10	Arctic Express Dual 19	Arctic Express Dual 28
Model No.	CK50920	CK50921	CK50922
<b>Selection Guide</b>			
Application	Transport / Storage System	Transport / Storage System	Transport / Storage System
Storage Type	Manual Fill / Canisters	Manual Fill / Canisters	Manual Fill / Canisters
LN <sub>2</sub> Capacity	10.0 Liters	18.5 Liters	28.0 Liters
Absorbed LN <sub>2</sub> Capacity	3 Liters	3 Liters	8 Liters
Neck Diameter	2.0 inch / 5.08cm	2.2 inch / 5.6cm	3.8 inch / 9.7cm
Static Holding Time – Laboratory	42 Days	125 Days	50 Days
Static Holding Time – Shipper	21 Days	21 Days	21 Days
Number of cansisters (included)	6	6	6
Canister Dimensions	1.5 x 11 inches 3.8 x 27.9cm	1.6 x 11 inches 4.1 x 27.9cm	3.1 x 11 inches 7.9 x 27.9cm
Hard Shell Shipping Container	standard	standard	standard
Exterior dimensions (Diameter x Height)	18 x 25 inches 45.7 x 63.5cm	22 x 28 inches 55.9 x 71.1cm	22 x 28 inches 55.9 x 71.1cm
<b>Maximum System Capability</b>			
Number of Canes per canister	5	6	21
Total number of Canes	30	36	126
Vial Capacity 1.2mL (6 per cane)	180	216	756
Vial Capacity 2mL (5 per cane)	150	175	630
Vial Capacity 4mL (3 per cane)	90	108	378
Vial Capacity 5mL (2 per cane)	60	72	252
Straw Capacity (10 per cane)	300	360	1,260
<b>Vessel Exterior Dimension</b>			
Diameter x Height	10.2 x 21.6 inch 25.9 x 54.9cm	14.5 x 25.7 inch 36.8 x 65.3cm	18.2 x 22.0 inch 46.2 x 55.9cm
<b>Product Weight</b>			
Empty	17 lbs. / 7.7 kg	24 lbs. / 10.9 kg	37 lbs. / 16.8 kg
Full	35 lbs. / 15.9 kg	57 lbs. / 25.9 kg	87 lbs. / 39.5 kg
Packaged / Shipping	34 lbs. / 15.5 kg	46 lbs. / 20.9 kg	60 lbs. / 27.3 kg
<b>Accessories</b>			
<b>Vials</b>			
1mL, case of 500	AY509X32	AY509X32	AY509X32
Cryogenic Vials(E), case/500, 1.2mL, 13.5mm O.K., 38.1mm H	AY509X13	AY509X13	AY509X13
1.5mL, case of 500	AY509X33	AY509X33	AY509X33
Cryogenic Vials(E), case/500, 2.0mL, 13.5mm O.K., 48.3mm H	AY509X12	AY509X12	AY509X12
<b>Misc.</b>			
Low Level Alarm, stand alone – <a href="#">See footnote (1)</a>	8130	8130	8130
Wheeled Accessory Cart, 5 inches high – <a href="#">See footnote (1)</a>	N/A	AY509X9	AY509X9
One Cryo Cane, 1.2ml – 6 Ampule	4000211	4000211	4000211
CryoSleeve (100 per case, length 273mm / 10.75 inches)	AY509X21	AY509X21	AY509X21
<b>Regulatory Listing</b>			
	CE	CE	CE

Footnote:

(1) The low level alarm and wheeled accessory cart can only be used in the laboratory application. Not for shipping.



## Thermo Scientific Thermo-Flask Benchtop Liquid Nitrogen Containers

Our Thermo-Flask liquid nitrogen containers feature inner vessels of borosilicate glass evacuated to  $1 \times 10^{-5}$  mmHg. Available in stainless steel, and featuring vented clamped lids, carrying handles and rubber cushioned bases.



- Durable, corrosion-resistant stainless steel exterior
- Shallow wide-mouth ideal for use as a cold trap
- Convenient dish-shaped design perfect for benchtop use with crushed ice and dry ice/alcohol
- "Push-fit" insulated lid, vented to prevent pressure build-up



# Thermo Scientific Thermo-Flask

## Order Information

Model No.	2129	2130	2122	2123	2124
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### Selection Guide

Application	LN <sub>2</sub> Benchtop Container	LN <sub>2</sub> Benchtop Container	LN <sub>2</sub> Benchtop Container	LN <sub>2</sub> Benchtop Container	LN <sub>2</sub> Benchtop Container
Storage Type	Manual Fill / Shallow Wide Mouth	Manual Fill / Shallow Wide Mouth	Manual Fill / SS with Lids and Handles	Manual Fill / SS with Lids and Handles	Manual Fill / SS with Lids and Handles
LN <sub>2</sub> Capacity	1000mL	1900mL	1.01 Liters	2.01 Liters	4.51 Liters
Inside Neck Diameter	5.1 inch / 13cm	6.1 inch / 15.5cm	3.4 inch / 8.6cm	4.2 inch / 10.7cm	5.9 inch / 15cm

### Vessel Exterior Dimension

Diameter x Height	6.3 x 4.5 inches 16 x 11.4cm	7.3 x 5.4 inches 18.5 x 13.7cm	4.6 x 9 inches 11.7 x 22.9 cm	5.6 x 10.6 inches 14.2 x 26.9cm	7.2 x 13.8 inches 18.3 x 35.1cm
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### Product Weight

Packaged / Shipping	8 lbs. / 3.6 kg	10 lbs. / 4.5 kg	6 lbs. / 2.7 kg	8 lbs. / 3.6 kg	10 lbs. / 4.5 kg
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### Accessories

12mL Dipper	AY509X6	AY509X6	AY509X6	AY509X6	AY509X6
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# Thermo Scientific LN<sub>2</sub> Supply Tanks

All of our stainless steel LN<sub>2</sub> supply tanks are rated at 22 psi.

## Order Information

Product Name	Thermo 50	Thermo 180	Thermo 230
Model No.	8127	8120	8121
<b>Selection Guide</b>			
Application	LN <sub>2</sub> Supply Tank	LN <sub>2</sub> Supply Tank	LN <sub>2</sub> Supply Tank
Type	Stainless Steel Low Pressure (22 psi)	Stainless Steel Low Pressure (22 psi)	Stainless Steel Low Pressure (22 psi)
LN <sub>2</sub> Capacity	50.0 Liters	180.0 Liters	230.0 Liters
Static Evaporation Rate	4% per day	2% per day	2% per day
Caster	Standard	Option	Standard
<b>Vessel Exterior Dimension</b>			
Diameter x Height / Hand Truck	16.0 x 41 inches 40.6 x 104.1cm	20.0 x 63.5 inches 50.8 x 161.3cm	26.0 x 54.8 inches / Hand Truck: 27 x 28 F/B inch 66.0 x 139.2cm / Hand Truck: 68.6 x 71.1 F/Bcm
<b>Product Weight</b>			
Empty	98.5 lbs. / 47.7 kg	210 lbs. / 95.3 kg	275 lbs. / 124.7 kg
Full	187.6 lbs. / 85.1 kg	531 lbs. / 241 kg	684.9 x 310.6 kg
Packaged / Shipping	136 lbs. / 62 kg	326 lbs. / 148 kg	425 lbs. / 193 kg
<b>Accessories</b>			
LN <sub>2</sub> Cylinder Hand Truck with Pneumatic wheels	N/A	4000173	N/A
LN <sub>2</sub> Cylinder Roller Base	N/A	4000175	N/A
6 ft transfer hose	4000401	4000401	4000401
Phase separator for transfer hose	4000571	4000571	4000571

Not approved for sales requiring CE



# Thermo Scientific Cryopreservation Accessories



- |                             |                                   |                                  |                                |
|-----------------------------|-----------------------------------|----------------------------------|--------------------------------|
| 1 Cell dividers             | 5 LN <sub>2</sub> measuring stick | 8 Cryo sleeve with optional cane | 13 Sensaphone dialing system   |
| 2 Square box with hole      | 6 CryoClaw                        | 9 Cryo markers                   | 14 Low-level alarm with sensor |
| 3 Rectangular cardboard box | 7 Cryo gloves                     | 10 T-valve assembly              | 15 Flexible metal hose         |
| 4 Polycarbonate boxes       |                                   | 11 Phase separator               |                                |
|                             |                                   | 12 Tongs                         |                                |

# Thermo Scientific Cryopreservation Accessories

## Order Information

Description	Model No.
<b>Cryo Vials</b>	
<i>Each vial is constructed of sterile polypropylene with a white marking area and includes a screw cap.</i>	
1.2mL, self-standing, conical interior bottom, silicone washer, one case of 500	4000198
2.0mL, self-standing, round interior bottom, silicone washer, one case of 500	4000200
4.0mL, self standing, round bottom, silicone washer, one case of 500	4000206
5.0mL, round bottom, silicone washer, one case of 500	4000208
<b>Cryo Vial Color Coding Caps</b>	
Rainbow (assortment of all colors), one case of 400	4000389
<b>Cryo Boxes</b>	
<b>Individual</b>	
2.0" (5.1cm) Rectangular Cardboard Box, includes a 40-cell Divider	4000189
2.0" (5.1cm) Square Stainless Steel Box, Does Not include a 100-Cell Divider	4000238
2.0" (5.1cm) Square Cardboard Box, includes a 100-Cell Divider	4000014
2.75" (7.0cm) Square Cardboard Box, Does Not include a 25-Cell Divider	189470
3.0" (7.6cm) Square Cardboard Box, includes a 100-Cell Divider	4000015
2.0" (5.1cm) High Polycarbonate Box with 100 Cell Divider, includes a numerical grid system printed on the cover	820010
2.0" (5.1cm) High Polycarbonate Box with 81 Cell Divider, includes a numerical grid system printed on the cover	820011
3.0" (5.1cm) High Polycarbonate Box with 81 Cell Divider, includes a numerical grid system printed on the cover	820013
<b>Dividers</b>	
Cardboard 100-Cell Divider	4000013
Cardboard 40-Cell Divider	4000174
Cardboard 25-Cell Divider	189387
<b>Canes</b>	
One Cane, 1.2mL – 6 Ampoule	4000211
One Aluminum Cane for storage of 12.5mm diameter Cryo Tubes	4000217
One Cane, 5.0mL – 2 Ampoule, 2009 = 10	4000214
One Aluminum Cane for 9.2mL and 10.0mL Gobelets, 2009 = 0	4000216
<b>Cryo Sleeve</b>	
Cardboard Sleeve, 0.6" (1.5cm) interior diameter, 10.8" (27.4cm) long, one case of 100	4000218
Polyvinyl chloride sleeve, 0.6" (1.5cm) interior diameter, 10.8" (27.4cm) long, one case of 100	AY509X21
<b>Tongs</b>	
<i>Transport vials from freezing racks to boxes</i>	
Stainless Steel Cryo Tongs	4000388
<b>Claws</b>	
<i>Retrieve fallen object in the LN<sub>2</sub> vessels</i>	
CryoClaw	AY509X18
Replacement suction cups for CryoClaw	AY509X19
<b>Measuring Stick</b>	
LN <sub>2</sub> Measuring Stick	180143



# Thermo Scientific Cryopreservation Accessories

## Order Information

Description	Model No.
<b>Gloves (Water Proof Cryo)</b>	
<b>Mid-Arm, 14.0" to 15.0" (35.6cm to 38.1cm)</b>	
Small	189441
Medium	189442
Large	189443
<b>Elbow-Length, 18.0" to 20.0" (45.7cm to 50.8cm)</b>	
Medium	189445
Large	189446
Extra-Large	189447
<b>Shoulder-Length, 28.0" (71.1cm)</b>	
Medium	189448
Large	189449
Extra-Large	189450
<b>Aprons</b>	
Small, 36.0"W (91.4cm)	189451
Medium, 42.0"W (106.7cm)	189452
Large, 48.0"W (121.9cm)	189453
<b>Cryo Marker Pens</b>	
<i>Fine tip, fast-drying, non-smearing, permanent ink; recommended for all Cryogenic vials at -200C (-328F).</i>	
Black, blue, green, and red, set of 4	4000221
Black, set of 4	4000222
<b>LN<sub>2</sub> Transfer Hoses and Phase Separator</b>	
4.0 ft. (1.2m) Flexible Metal Hose, 1/2", 45 degree flare, swivel ends	4000400
6.0 ft. (1.8m) Flexible Metal Hose, 1/2", 45 degree flare, swivel ends	4000401
Phase Separator, 1.3" (3.3cm) diameter x 3.0" (7.6cm) long x 1/4" FPT	4000571
<b>Low Level Alarm</b>	
Low Level Alarm (120V) with Sensor for any standard-sized LN <sub>2</sub> container, includes dry contacts for remote alarm	8130
<b>Sensaphone® Telephone Dialing Systems</b>	
4 pre-programmed numbers, 120V 60 Hz	400047
4 pre-programmed numbers, 220V 50 Hz*	400182
8 pre-programmed numbers, 120V 60Hz	400134
8 pre-programmed numbers, 220V 50Hz*	400183
<b>Phase Separator</b>	
Phase Separator with manual valve & T fitting, used to connect two transfer hoses to a supply tank	4000290

\*Not CE marked





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