

LIQUID NITROGEN CONTAINERS

> BIOLOGY / LABORATORY ANALYSIS

BIOLOGY

Liquid nitrogen can be used in biology, scientific research and sample analysis for the preservation of samples themselves or as a tool to assist other laboratory equipment.

CRYOPRESERVATION

Cryopreservation is the process of preserving cells or tissues in liquid nitrogen at -196°C . Liquid nitrogen can be used for the conservation of biological material for long periods and to store cell lines and unstable proteins from animal and plant sources, keeping their properties unchanged over time. As well as the preservation of animal semen for example, liquid nitrogen is used in the production and conservation of vaccines. It is also used to preserve differentiated (shoots, shoot apices) and undifferentiated plant cells (embryogenic calli) at extremely low temperatures. Cryopreservation of these particular plant species helps to reduce the risk of extinction, due to human or natural causes, at world level.

HOW CRYOPRESERVATION WORKS

After a phase of programmed freezing, biological samples are stored in small test-tubes (cryotubes), and placed in aluminium sticks (cryocanes) or in plastic boxes (cryoboxes).



> CRYOPRESERVATION WITH CRYOTUBES:

1 SOLUTION ALLUMINIUM STICKS PLACED IN STANDARD CANISTERS OR

THIS SOLUTION INCREASES THE STORAGE CAPACITY OF TEST-TUBES INSIDE THE CONTAINER AT A LOWER COST. IT IS POSSIBLE TO USE CONTAINERS WITH A NECK DIAMETER OF ONLY 50MM WHICH ARE ALSO IDEAL FOR TRANSPORTATION.

CRITUBI



2 SOLUTION PLASTIC BOXES INSERTED INTO RACKS (DIFFERENT LEVELS AVAILABLE).

THIS SOLUTION FACILITATES THE IDENTIFICATION OF CRYOTUBES IN RACKS.

STICKS + CRYOTUBES



CANISTER + STICKS + CRYOTUBES



CRYOBOX + CRYOTUBES



RACKS + CRYOBOX + CRYOTUBES



Accessories



YDS 47-127 HAS TWO SOLUTIONS, WITH **CANISTERS** OR WITH **RACKS**

> BIOLOGY / LABORATORY ANALYSIS

SCIENTIFIC RESEARCH AND ANALYSIS

It is necessary to work with low temperatures in various fields of scientific research and in many cases liquid nitrogen is one of the most convenient solutions. Liquid nitrogen is used in Scanning Electron Microscopy (SEM) which requires a superconductor cooled to extremely low temperatures in order to function correctly. It is also used in x-ray diffraction in order to keep the sample at low temperatures. As a result, vibrational movement is limited and a higher resolution obtained. Liquid nitrogen plays an essential role in the extraction of DNA through cryogenic grinding, another frequently used technique in scientific research. In the majority of cases liquid nitrogen is used as a tool to aid scientific equipment.

CRYOFARM OFFERS A WIDE RANGE OF CONTAINERS SUITABLE FOR EVERY NEED.



TECHNICAL SPECIFICATIONS

> TRANSPORTATION AND STORAGE OF LIQUID NITROGEN

TRANSPORTATION AND PRESERVATION WITH CANISTERS

PRESERVATION WITH CANISTERS



		LOW	LOW	LOW	LOW	MEDIUM	HIGH	HIGH	HIGH	HIGH	MEDIUM
Static Holding Time											
Storage capacity of cryotubes (1.2,2.0ml) in canister		2	6	48	48	120	120	120	510	1050	1050
Number of canisters		1	3	6	6	6	6	6	6	6	6
Canister levels		1	1	1	1	2	2	2	2	2	2
Canister diameter (mm)		25	19	39	39	39	39	39	70	100	100
Consumption											
Daily Evaporation Rate (L/d)		0,11	0,13	0,13	0,19	0,1	0,1	0,11	0,19	0,3	0,33
Static Holding Time (d)		9	16	16	32	100	200	320	185	116	139
Working Holding Time (d)		3	6	6	12	60	140	180	110	80	100
Container measurements											
Capacity (L)		1	2	3	6	11	20	35	35,5	35,5	47
Neck diameter (mm)		30	30	50	50	50	50	50	90	125	127
Height (mm)		320	365	425	445	615	655	670	725	690	675
Outer diameter (mm)		180	217	224	287	287	409	473	473	473	500
Empty weight		2	2,9	3,4	5	6,8	11,4	14,5	16,1	15,5	19
Full weight		2,8	4,6	5,9	9,9	15,7	27,6	43,2	44,8	44,2	57

PRESERVATION WITH RACKS



		MEDIUM	MEDIUM	HIGH	HIGH
Static Holding Time					
Storage capacity of cryotubes (1.2,2.0) in rack		875	2025	4050	5670
Number of racks		7	5	5	7
Rack levels		5	5	10	10
Rack measurements (mm)		82 x 84	142 x 144	142 x 144	142 x 144
Box measurements (mm)		76 x 76	134 x 134	134 x 134	134 x 134
Consumption					
Daily Evaporation Rate (L/d)		0,33	0,79	0,87	0,87
Static Holding Time (d)		139	82	139	202
Working Holding Time (d)		100	58	100	140
Container measurements					
Capacity (L)		47	65	121	175
Neck diameter (mm)		127	216	216	216
Height (mm)		675	710	1000	1020
Outer diameter (mm)		500	573	573	676
Empty weight		19,57	27,5	43	54,5
Full weight		67	93	256,5	485
Trolley		optional	supplied	supplied	supplied

TECHNICAL SPECIFICATIONS

> TRANSPORTATION AND STORAGE OF LIQUID NITROGEN

LIQUID NITROGEN STORAGE



Static Holding Time		MEDIUM	HIGH	HIGH
Consumption				
Daily Evaporation Rate (L/d)		0,1	0,1	0,11
Static Holding Time (d)		100	200	320
Container measurements				
Capacity (L)		10	20	35
Neck diameter (mm)		50	50	50
Height (mm)		530	655	670
Outer diameter (mm)		303	409	473
Empty weight		6,2	11,4	14,5
Full weight		14,3	27,6	43,2

CRYOGENIC FLASKS



Capacity		LOW	LOW	LOW	LOW
Static Holding Time		LOW	LOW	LOW	LOW
Container measurements					
Capacity (L)		1	2	4,5	1
Diameter (mm)		116	142	190	175
Height (mm)		228	268	335	105
Inner diameter (mm)		80	108	150	126
Inner height (mm)		180	205	283	85

GLOSSARY

yds 00-00 - yds refers to litres & neck diameter- e.g. yds 1-30, 1 refers to capacity (L), 30 to neck diameter (mm)

Canisters with 1 level - 1-30/6-50 containers have canisters with one level and which contain aluminum sticks. Each stick can hold 2 cryotubes.

Static Holding Time - Static Holding Time refers to the level of nitrogen inside the container given optimal conditions

Working Holding Time - Working Holding Time refers to the average duration of liquid nitrogen inside the container during working conditions

Checking Holding Time - it is recommended to check the nitrogen level inside the container once a week using a suitable measuring stick

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