

# 9 - Dewars and cryo accessories

## Liquid nitrogen storage Dewars

This series of liquid nitrogen Dewars is based on a proven design and construction and provides a range of capacities to suit individual laboratory storage and liquid nitrogen handling requirements.

These Dewars combine the qualities of strength, high thermal efficiency and ease of handling.

Technical specifications are shown in the table below:

Cat. no.	B7457	B7458	B7465	B776	B778A	B796
Capacity, litres	2	5	10	20	25	25
Evaporation rate, litres/day	0.08	0.18	0.2	0.18	0.25	0.6
Static holding time, days	25	28	50	111	100	41
Weight empty, kg	2.8	4.1	5.6	9.1	7.4	12.2
Weight full, kg	4.4	8.1	13.7	25.3	27.6	32.4
Neck diameter, mm	32	51	51	51	51	49.5
Overall height, mm	385	495	560	570	585	600
Overall diameter, mm	185	216	305	407	395	400

## Aluminium Dewars – 2, 5 and 10 litre



These Dewars are ideally suited to applications where smaller quantities of liquid nitrogen are required. They are lightweight, portable and supplied with plug cap and carrying handle. Low static evaporation rates are achieved through high vacuum and multilayer insulation.

- B7457** Aluminium Dewar. 2 litre
- B7458** Aluminium Dewar. 5 litre
- B7465** Aluminium Dewar. 10 litre

## Aluminium Dewars – 20 and 25 litre



These Dewars are made of aluminium. The 20 litre Dewar has the option of a roller base for ease of transportation. The 25 litre Dewar has support trunnions to enable use with a trolley/pouring frame.

- B776** Liquid nitrogen Dewar. 20 litre
- B777** Roller base for B776
- B778A** Liquid nitrogen Dewar. 25 litre
- B798T** Trolley/pouring frame for B778A

## Heavy duty Dewar – 25 litre



This heavy duty, stainless steel Dewar is ideally suited to the more rigorous environment of industrial applications. A roller base is available for ease of transportation.

- B796** Heavy duty stainless steel Dewar. 25 litre
- B797** Roller base for B796
- B798T** Trolley/pouring frame for B796

## Small liquid nitrogen Dewars

These are very useful for handling the small quantities of liquid nitrogen needed for freezing samples or for topping up anti-contamination Dewars.

They all have quality borosilicate glass inserts protected by polypropylene or metal cases. All glass inserts are replaceable.

### Polypropylene Dewar

This low cost, one litre capacity, wide neck Dewar, with a tough blue polypropylene shock-absorbing container, is easily dismantled to replace the insert. It includes a coated carrying handle and an insulated, vented, push-fit lid.

**B7589** Dewar. 1 litre, in polypropylene case with lid

**B7449** Replacement glass insert



### Enamelled steel Dewars

A range of rust and corrosion resistant Dewars with cushioned bases is available with wide or narrow necks, either with or without a fold down handle and insulated lid.

With handle and lid	Capacity (litres)	ID (mm)	OD (mm)	Inside depth (mm)	Overall height (mm)
<b>B7442</b> Enamelled Dewar	1.0	85	116	185	228
<b>B7441</b> Enamelled Dewar	2.0	106	142	205	268
<b>B7598</b> Enamelled Dewar	4.5	150	182	280	350
<b>B7599</b> Enamelled Dewar	10.0	200	245	375	445



- B7449** Replacement glass insert. 1 litre
- B7448** Replacement glass insert. 2 litre
- B7587** Replacement glass insert. 4.5 litre
- B7588** Replacement glass insert. 10 litre

Without handle and lid	Capacity (litres)	ID (mm)	OD (mm)	Inside depth (mm)	Overall height (mm)
<b>B7590</b> Enamelled Dewar	0.2	40	68	170	215
<b>B7591</b> Enamelled Dewar	0.7	54	81	315	350
<b>B7592</b> Enamelled Dewar	0.75	65	94	240	285
<b>B7593</b> Enamelled Dewar	1.1	75	106	235	275
<b>B7594</b> Enamelled Dewar	1.5	90	126	240	290
<b>B7595</b> Enamelled Dewar	1.5	100	137	240	280
<b>B7596</b> Enamelled Dewar	2.0	100	137	290	330
<b>B7597</b> Enamelled Dewar	3.0	135	175	230	290



Replacement glass inserts are available for all models; add suffix R to catalogue reference.

### Stainless steel Dewars

These are high quality Dewars with a carrying handle and stainless steel outer case. Toggle clamps secure the lid to the body for safe transportation.



		Capacity (litres)	ID (mm)	OD (mm)	Inside depth (mm)	Overall height (mm)
<b>B7446</b>	S/steel Dewar	1.0	85	116	185	228
<b>B7443</b>	S/steel Dewar	2.0	106	142	205	268
<b>B7585</b>	S/steel Dewar	4.5	150	182	280	350
<b>B7586</b>	S/steel Dewar	7.0	200	245	285	335

- B7449** Replacement glass insert. 1 litre
- B7448** Replacement glass insert. 2 litre
- B7587** Replacement glass insert. 4.5 litre
- B7584** Replacement glass insert. 7.0 litre

For many applications it is advantageous to have well-insulated shatter proof Dewars with a wide neck to allow easy access for introducing articles to be cooled. A carrying handle is provided for safety in transportation on all models except **B7451**.



		Capacity (litres)	ID (mm)	OD (mm)	Inside depth (mm)	Overall height (mm)
<b>B7451</b>	S/steel Dewar	0.5	65	87	180	204
<b>B7452</b>	S/steel Dewar	1.0*	85	107	206	232
<b>B7453</b>	S/steel Dewar	1.0*	100	122	157	177
<b>B7454</b>	S/steel Dewar	2.0*	100	122	285	313
<b>B7455</b>	S/steel Dewar	3.0	185	200	160	190
<b>B7456</b>	S/steel Dewar	6.0	185	200	270	300

\* These models have volume level lines on the inside of the Dewar to indicate the volume of contents.

Lids are available for these models, add suffix L to catalogue reference.

### Liquid nitrogen carriers



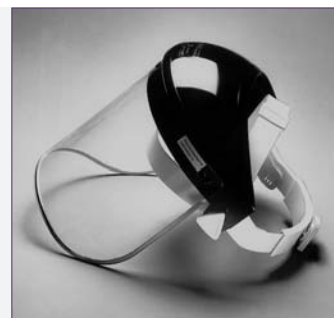
These storage vessels are shatterproof and ideal for the transport and short term storage of liquid nitrogen. They are constructed from double walled high density polyethylene with urethane foam insulation and will withstand temperatures down to -196 °C, with a storage time of 1 - 2 days. Fitted with a pouring spout, insulated cover and carrying handle.

- B7475** Liquid nitrogen carrier. 1 litre
- B7476** Liquid nitrogen carrier. 2 litre
- B7477** Liquid nitrogen carrier. 4 litre

## Face shield

A protective anti-splash face shield is recommended where the possibility of excessive boiling, spraying or splashing of low temperature liquids is a hazard.

**C883** Face shield



## Cryogloves

These gloves have been designed for use with ultra-low temperature freezers, cryostats, cold rooms and freezers for handling dry ice and for retrieving materials from liquid nitrogen. They provide protection to -135 °C. The gloves retain flexibility, even after long periods in a cold atmosphere, and retain warmth while damp. They are machine washable and waterproof, but must not be immersed in liquid nitrogen. Four styles are available: wrist length 305 mm (12"), mid-arm length 355 mm (14"), elbow length 483 mm (19") and shoulder length 1020 mm (40").

**C863** Cryogloves, wrist length, medium\*. Pair

**C864** Cryogloves, mid-arm length, medium\*. Pair

**C865** Cryogloves, elbow length, medium\*. Pair

**C869** Cryogloves, shoulder length, medium\*. Pair



These cream hide cryogenic gloves are fully lined with 3M™ Thinsulate™, have knitted wrists and hide vein patches and are moisture-resistant.

Welted front seams. Ideal for handling liquid transfer hoses.

**C8055** Thinsulate cryogenic gloves. Pair

With blue-coated nylon backs and hide-reinforced fingertips and back straps. Ideal for hospital and laboratory use.

**C8056** Thinsulate cryogenic gloves with blue-coated nylon backs. Pair

\*Please add suffix S for small or L for large to catalogue reference.

## Cryo aprons

Essential for protection when handling low temperature liquids.

Manufactured from the same material as the cryogloves (**C863/4/5/9**), they have fully adjustable straps.

**C8050** Cryo apron, small, 910 mm long

**C8051** Cryo apron, medium, 1060 mm long

**C8052** Cryo apron, large, 1210 mm long

**C8053** Cryo apron, extra large, 1280 mm long



### Ceramic tweezers



These ceramic tweezers overcome the disadvantages of tweezers manufactured from conventional materials such as stainless steel, titanium and plastic. They can be used for a variety of laboratory and electronic applications due to their heat and corrosion resistance, insulation and anti-static and nonmagnetic properties. Three shapes are available, straight pointed, curved or serrated, on either a special aluminium alloy or polyacetal shank. The straight pointed tweezers are also available on a stainless steel shank.

- T5150** Ceramic tweezers, straight, alloy shank
- T5151** Ceramic tweezers, curved, alloy shank
- T5152** Ceramic tweezers, serrated, alloy shank
- T5153** Ceramic tweezers, straight, polyacetal shank
- T5154** Ceramic tweezers, curved, polyacetal shank
- T5155** Ceramic tweezers, serrated, polyacetal shank
- T5156** Ceramic tweezers, straight, stainless steel shank



### ESD cushion grip tweezers



These non-magnetic stainless steel precision tweezers with ESD safe red cushion grip handles have high resistivity. They are particularly useful for cryo-applications.

- T5509** ESD tweezers, 115 mm, extra fine tips
- T5510** ESD tweezers, 120 mm, fine curved tips



### Cryo pliers



These pliers are easy to use and have self-aligned copper bars for quick freezing. They are ideal for *in situ* and *in vivo* applications for both animal and plant tissue. Two models are available: one suitable for quick freezing micron-sized pieces of tissue; the other for millimetre-sized tissue.

- T5370** Cryo pliers
- T5371** Cryo pliers for 1 mm tissue

Warley, A. 'Cryofixation of heart tissue for X-ray microanalysis'. *Scanning Microscopy* 3, 1247-1252. 1989.

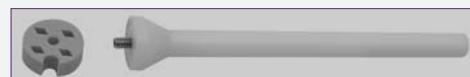
Hagler, H.K. and Buja, L.M. 'New techniques for the preparation of thin freeze-dried cryosections for X-ray microanalysis'. 161. 1984.

Revel, J-P, Barnard, T., Haggis, G.H. (eds), SEM Inc., AMF O'Hare, Chicago. 'The Science of Biological Specimen Preparation'.

## Cryo grid boxes

These cryo grid boxes are used for transferring, storing and manipulating vitrified cryo TEM specimens made with cryodevices like the FEI Vitrobot, Gatan 626 or Gatan CT3500 cryotransfer systems and other cryovitrification processes. There are two versions, each with four storage positions. The round box is the most widely used and is available with or without a non-static rotatable lid. The square cryo TEM grid box includes a non-static rotatable lid. All of the boxes have a 5/40 tap in the centre. On versions with lids, the lid is held in place with a stainless steel screw. A handling rod is available for the cryo grid boxes.

- G3727** Cryo grid box with lid, round
- G3728** Cryo grid box base only, round
- G3735** Cryo grid box with pin type lid, round
- G3729** Cryo grid box with lid, square
- G3733** Cryo grid box handling rod



## Stainless steel freeze-drying holders

This range of stainless steel, interlocking 25 mm sample holders is available for bulk specimens and membrane filters. The material is plunged into the cryogen and transferred into the pre-cooled sample holder. Using the handling tongs, the holders can be stacked onto a freeze-drying stage. The holders allow safe handling of valuable low temperature specimens while minimising temperature fluctuations.

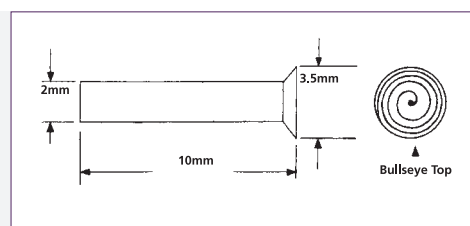
- G3936** Bulk freeze-drying sample holder, 25 mm dia
- G3937** Sample holder for membrane filter, 25 mm dia
- G3938** Handling tongs



## Specimen pins for cryo-ultramicrotomy

These aluminium specimen mount pins are suitable for mounting samples for cryo-ultramicrotomy.

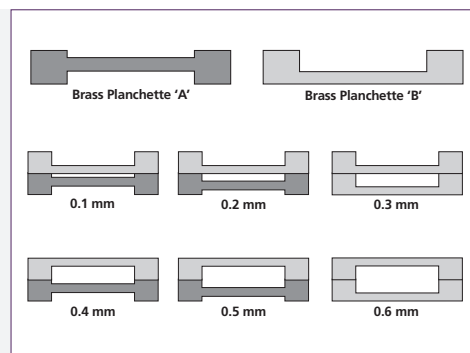
- G3465** Cryo specimen pins. Pack of 50



## Cryo freezer hats

These freezer hats for holding specimens in high pressure freezing equipment are available in brass only. The planchette designs are illustrated. The depths of cavity are 0.1, 0.2 and 0.3 mm. Using two planchettes, one on another, in various combinations, allows cavity thicknesses of 0.1, 0.2, 0.3, 0.4, 0.5 and 0.6 mm to be achieved.

- G3466** Freezer hats, type A. Pack of 50
- G3467** Freezer hats, type B. Pack of 50



### Cryo-Jet



A CFC-free aerosol can of gas suitable for freezing tissues and paraffin blocks.

**L4194** Cryo-Jet aerosol can. 333 g

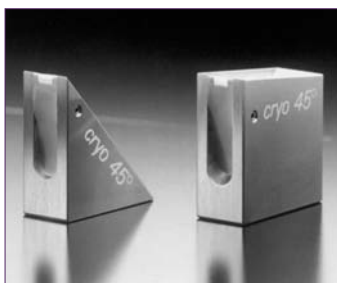
### OCT compound



Embedding medium for frozen tissue specimens.

**R1180** OCT compound. 125 ml

### Diamond knives for cryo applications



Cryo diamond knives can be used for a wide range of low temperature applications. Cryosectioning of biological specimens is increasingly important in immunocytochemistry, elemental analysis and morphological studies. In materials science, cryosectioning is used for polymers, rubber, paints and gels.

For details of all diamond knives, see section 14.

### Fro-Tissuer™ pen



This pen is designed to prevent frozen sections from falling off, moving or wrinkling on the slide during immunostaining procedures. It provides a sticky membrane which is applied to the slide and onto which the section is placed. The membrane is stable up to 110 °C and is suitable for vigorous applications such as *in situ* hybridisation.

**L4198** Fro-Tissuer pen

### Tissue capture pen



This tissue capture pen for use with frozen or paraffin sections is stable up to 110 °C and will last for 3000 - 5000 applications. A coating on the glass slide will prevent the sections from falling off or wrinkling.

**L4370** Tissue capture pen



## Low temperature safety labels

This continuous, printed roll of adhesive-backed safety labels is perforated for ease of use. The adhesive-backed vinyl with laminated polypropylene facing makes the labels suitable for chemical and weather-resistant work. Labels 50 mm square, 15 m roll.

**G3670** Labels: 'Low temperature, liquid gas - burn risk'. 15m roll

**G3671** Labels: 'Eye protection must be worn'. 15m roll



## Cryogenic labels

Pre-cut, peel-off labels designed for use at cryogenic temperatures. The chemically inert polyester will adhere to all plastic and other materials under conventional and cryogenic freezer conditions. They will not become brittle or break off cryovials at low temperatures.

**G3730** Cryogenic labels 32.5 x 12.5 mm. Pack of 1000



## Nalgene® cryoware labels

Durable cloth labels are specifically designed to adhere to plastic and cardboard at ultra low temperatures. Supplied in sheets of 20 labels, 10 sheets per pack.

**G3731** Cryoware labels 25.4 x 50.8 mm. Pack of 200



## Nalgene® cryoware markers

These cryoware markers have an extra fine point, are smudge-proof and will permanently mark cloth, cardboard and plastic. The ink will not fade at ultra low temperatures. Supplied in a pack of four assorted colours: black, blue, green and red.

**G3732** Cryoware markers. Pack of 4



## Low temperature thermometers

Length 300 mm. These thermometers are not reinforced.

**B8130** Low temperature thermometer, alcohol  
Calibrated from -100 °C to 30 °C, sub-divisions 1 °C.

**B8131** Low temperature thermometer, mercury  
Calibrated from - 40 °C to 40 °C, sub-divisions 0.5 °C.

