

## Maintenance Contract with the University of Antwerp



The UA has found a suitable partner for the maintenance of its Chart MVE products. Their cryogenic installation consists of vacuum insulated piping which is connected to a filling box outside, and a switchover device and nitrogen tanks inside. They had been looking for a good technical partner for some time and found that Cryo Solutions best suited their needs.

Cryo Solutions supplies technical support 24/7, all year round and has a wide range of expertise on all existing cryogenic equipment, irrespective of the manufacturer or supplier.

## New and Modernised Cryobank for the University Medical Centre in Utrecht



Cryo Solutions was chosen to supply the new cryobank for the stem cell laboratory at the University Medical Centre in Utrecht. The project involved the purchase of new equipment and the modernisation and upgrading of existing equipment.

The new equipment included vacuum insulated piping with a de-gas simultaneous filling unit and a switchover device for the pressure tanks. New oxygen detection equipment was also fitted and a new Chart MVE1841 biological storage vessel with a "dry" storage system was purchased. Cryo Solutions upgraded the existing MVE1841 vessels with new TEC3000 automatic filling systems and modernised the vessels by placing "dry" storage systems.

## Chart MVE1411 for the LifeLines Project



The University of Groningen (RUG) and the University Medical Center Groningen (UMCG) have chosen the Chart MVE1411 as the standard biological storage vessel for their LifeLines project. This project involves monitoring a large segment of the population in the area of Groningen for a long period of time in order to study the connection between chronic disease and certain environmental and cultural factors.

They have chosen a Chart MVE product for several reasons:

- 1 The individual gas bypass system
- 2 The internal 72 hour battery back-up system
- 3 The use of double magnetic valves for overflow problems
- 4 Lid handling is much better than competitors' systems
- 5 The total dimensions of the vessel are smaller and lower compared to those of competitors' products
- 6 You can choose between two different "dry" gas phase storage systems
- 7 You can choose a cabinet or non-cabinet version
- 8 There are more options in storage size compared to competitors' systems

## Molecular Cooking at Hotel/Restaurant Chateau St. Gerlach

Executive Chef Otto Nijenhuis has approached Cryo Solutions for the delivery of liquid nitrogen and necessary equipment to this Michelin star restaurant. United States president George W Bush stayed at this famous hotel/restaurant during his trip to Holland when he visited the Second World War cemetery. The hotel arranges excellent "Culinary Packages". Further information on this topic can be found on the website at

[www.chateauhotels.nl](http://www.chateauhotels.nl)



## Product info

### "Dry" Gas Phase Storage



These days, almost all new biological storage vessels with automatic filling are equipped with a "dry" storage system. This is to ensure that there is absolute separation between the liquid nitrogen and the stored materials.

There are currently two types of biological storage vessels available with automatic filling and which are equipped for "dry" storage. This is achieved by means of a stainless steel and waterproof frame with compartments or by using a special turntable (Eterne series) situated above the liquid.

The "dry" storage system using a frame has already

been described in an earlier newsletter. The greatest advantage of that system is quick and easy access to the racks, but it does have a relatively high nitrogen consumption. The partitioned frame enables quick and easy access to the racks. This vessel is primarily suitable for short term storage.

The turntable system offers other great advantages including the fact that the top is also vacuum insulated, and the vessel is equipped with a small opening. This results in a much lower and more stable temperature of -190 degrees Celsius and a nitrogen consumption of at least 30% less than other systems.

This system is primarily suitable for long term storage.





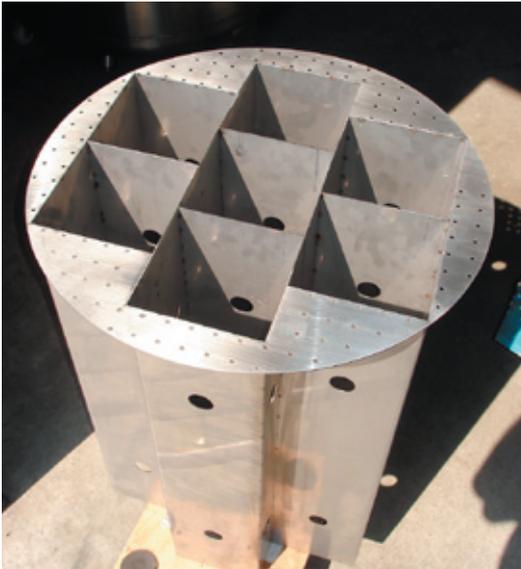
**The advantages are:**

Minimum risk of cross contamination
Better and more stable temperature control in the gas phase of liquid nitrogen
The temperatures at which the materials are stored are lower (-190 or -170) than in conventional gas storage (-150)
The low temperatures are maintained better and for a longer time when the supply is cut off for a long period. This is due to the quantity of steel in the “Dry” gas phase storage system which is cooled down to liquid nitrogen temperatures
Your staff are safer as they cannot come into contact with liquid nitrogen
Your staff can work with the system more easily and in a more relaxed fashion as each rack has its own partition
The time that materials are outside the cooling system is much shorter thanks to the easier rack handling
This way of gas phase storage results in a larger storage capacity, due tot the fact that you can use all the levels of your racks, compared to the conventional gas phase storage in which the lower two levels are not used. (see data sheet)
“Dry” storage with a waterproof frame does not affect liquid nitrogen consumption
Nitrogen consumption with the Chart MVE Eterne series vessel is over 30% less than that of a conventional frame system

**The Eterne series offers the following advantages:**

Better and more stable temperature control in the gas phase of liquid nitrogen
The small opening in the Eterne series allows for better and longer temperature maintenance when the lid is opened
The vacuum insulated top of the Eterne also ensures that low levels remain for a longer period when the liquid Nitrogen supply is cut off for a longer time
The Eterne turntable can be fitted with a partition for easy rack handling
The storage method used in the Eterne series saves significantly on liquid nitrogen consumption, which is over 30% less than that of a comparable “dry” frame vessel

## “Dry” storage kit for existing vessels



This system can be fitted in new as well as existing vessels provided they have an automatic filling unit. Cryo Solutions can manufacture these frames in any type or size required. We have experience in supplying frames for the “dry” storage of vials, straws, blood bags and Sanbio cups, and in all sizes, e.g. for 5,000 or 40,000 vials.

These frames have been fitted in several brands of vessel including Taylor Wharton, Chart MVE, Cryo Anlagenbau, Messer Griesheim, State Bourne and Air Liquide.

## Replacement of ultra low freezers with “dry” storage

The virology department at the Erasmus MC in Rotterdam in the Netherlands (Prof. Ab Osterhaus) has chosen to replace their -140 ultra low freezers with Chart MVE Eterne series dry storage vessels. The idea behind this decision is to cut back on operational costs whilst increasing the safety of the storage system. Both systems are in use: an Eterne series for long term storage (low nitrogen consumption) and a MVE series with “dry” frame option as a working vessel (quick and easy access).

### The advantages are:

They are safer because the cooling medium is still in the vessels when there is a failure in power. The vessels also have a 72 hour battery back-up
If an ultra low freezer fails, no cooling will be available and the freezer then has to be filled with liquid nitrogen as a back-up. Alternatively, a fully operational second freezer would be required as a back-up unit
The running costs are much lower (low nitrogen prices)
No additional air conditioning is required for the room as there is no heat exchange as is the case with mechanical ultra low freezers
It is more pleasant to work with nitrogen thanks to the significant reduction in noise levels
Maintenance costs are much lower (no expensive mechanical parts)
The lifespan of the nitrogen vessel is much longer (less moving parts and no compressor)