

NEW

4titude[®]
www.4ti.co.uk

PlateStable™

A modular solution for compound storage

4titude's new PlateStable™

has been designed for safe storage of laboratory samples. Pharmaceutical compounds dissolved in DMSO and other sensitive specimen are protected from moisture uptake, Oxygen, light and other damaging factors.

For added peace of mind the PlateStable can be used in a non-invasive manner, to monitor the atmosphere inside the enclosures throughout the storage cycle of the compounds!

new in
2007



benefits

- Safe - O₂ & moisture free storage
- Traceable - storage conditions can be verified at any time
- Scalable - enclosures are added as needed
- Flexible - cold or ambient storage
- Lab ware Independent - works with all SBS standard consumables
- Space saving - containers are stackable
- Versatile - storage and delivery of compounds
- Reliable - no moving parts to fail
- Cost effective & Simple to use

PlateStable™

Inert Sample Storage

Fully automated sample storage systems for the safe-keeping and management of compound libraries have been available for some years. Sensitive samples such as compounds in DMSO are kept in an inert Nitrogen or Argon atmosphere to minimise water uptake or the damaging effects of atmospheric Oxygen (see page 3 for background information and literature references).

Because of their cost and size these robotic sample management systems are mainly restricted to central stores of large pharmaceutical research facilities. For these reasons the proven benefits of inert sample storage were, until recently, not available to most laboratories involved in drug development and screening of pharmaceutical compounds.

4titude was the first company to offer a modular and fully scalable system for safe-keeping of compounds and other sensitive laboratory sample.

We are now launching an all new solution for the safe keeping of compounds and other valuable laboratory samples such as microarray slides.

Pic: "Aintree" container

PlateStable™

The system consists of one control module and a flexible number of containers for the storage of SBS standard laboratory consumables (plates or tube racks). 4titude offers a number of different designs of different size to accommodate for different users' needs (see page 4 for images and descriptions).

The usage of the system is simple: PlateStable™ enclosures are loaded with plates or tube racks, sealed and then connected to the control unit. During a short flushing cycle the atmosphere inside the sealed enclosure will be replaced by dry inert gas (usually Argon or Nitrogen) to a pre-set level of purity.

Once the flush cycle is completed the enclosures are disconnected from the control module and transferred to cold or ambient storage. Sealed enclosures can be left for 12 months with no change in storage conditions.

4titude's new PlateStable™ system now also includes a new monitoring system allowing the user to analyse the atmospheric condition inside the enclosures at any time during the storage cycle.



Keeping your compounds safe in 5 easy steps!

Step 01

Fill a PlateStable™ container with labware



Step 02

Fit the lid to seal the PlateStable™ container



Compound Storage in DMSO

Dimethyl Sulfoxide (DMSO) is a versatile and powerful solvent that is widely used for the storage of organic compounds in pharmaceutical research. It has very good solubilising ability, is chemically relatively inert and has high boiling and freezing points. The aggressively hydrophilic nature of DMSO can, however, lead to rapid moisture uptake and irreversible damage to precious compound collections.

Factors affecting integrity of solubilised compounds

- When exposed to normal laboratory atmosphere, fresh DMSO gains water rapidly and the sample is almost saturated within 24 hours total exposure (see Fig. 1). Such water uptake can lead to problems with degradation, dilution and precipitation of compounds (Cheng, X. et al.; JBS 8; 3; 292-304 (2003)).
- Multiple freeze-thawing of DMSO solutions can also have detrimental effect on sample integrity (Kozikowski, B.A. et al.; JBS 8; 2; 210-215 (2003)). Freeze-thawing can lead to precipitation of samples but also increases the risk of moisture uptake during the process.
- Oxygen has been shown to be detrimental to sample integrity (Cheng, X. et al.; JBS 8; 3; 292-304 (2003)).

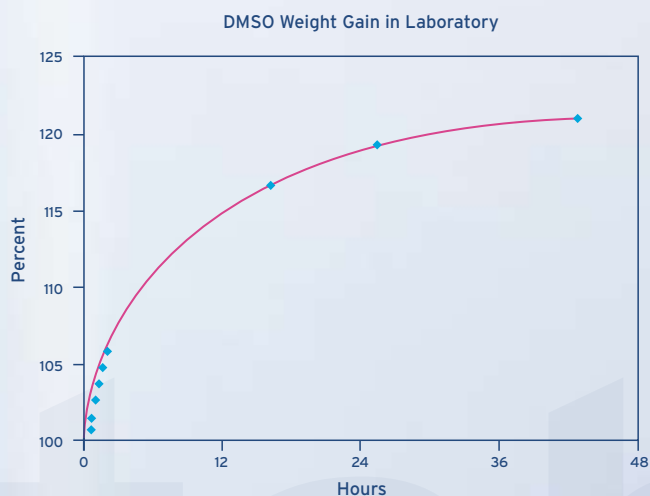


Fig. 1: Fresh DMSO is very hygroscopic, gaining 5% water in less than 2 hours exposure to normal laboratory atmosphere. The sample is almost saturated within 24 hours total exposure.

Maintaining high quality compound libraries

To protect the integrity of a compound collection it is important that solids and liquids are maintained under highly controlled environments. This includes limiting the exposure of samples to the atmosphere or minimising stress factors such as multiple freeze-thawing.

DMSO solutions should be stored and handled at less than 10% relative humidity throughout to minimise absorbance of water. Repeated freeze-thawing should be avoided and for shorter periods samples may be kept at 19-22°C, just above the freezing temperature of DMSO.

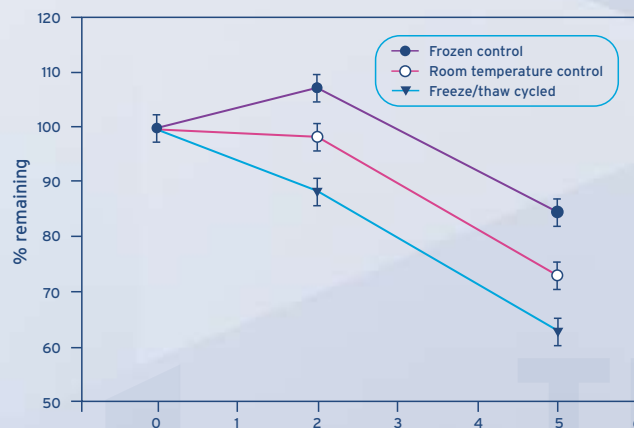


Fig. 2: Studies at various laboratories have shown that storing DMSO solutions at room temperature over shorter periods provides reduced levels of compound degradation compared to repeated freeze-thawing (Kozikowski, B. et al.; JBS 8; 2, 2005-2009 (2003)).

Step 03

Connect the container to the PlateStable™ station



Step 04

Start the flushing cycle



Step 05

Disconnect the container. The inert environment will be maintained preserving the stored compounds

PlateStables

4titude offers a variety of container designs. In addition, custom modifications are available on request.

Code 4Ti-0026

"Cheltenham", double tower, for up to 50 plates

Picture coming soon



Code 4Ti-0027

"Ascot", container design with wheels (not shown), for up to 320 plates



Code 4Ti-0025

"Sandown", horizontal design, for up to 60 plates

Picture coming soon

Code 4Ti-0024

"Aintree" design, 6 draws, for up to 336 plates

Ordering Information

CODE	DESCRIPTION	DIMENSIONS HxWxL (Approx)
4Ti-0020	PlateStable™ Control Unit	100x270x270mm weight: 3.5kg
4Ti-0024	"Aintree" container, 6 draws, for up to 336 plates	460x350x620mm
4Ti-0025	"Sandown" container, single draw, for up to 60 plates	230x165x560m
4Ti-0026	"Cheltenham" container, double tower, for up to 50 plates	370x210x160m
4Ti-0027	"Ascot" container, with wheels, for up to 320 plates	620x350x460mm
4Ti-0028	"Newmarket" container for 4 standard slide boxes	100x400x300mm
4Ti-0029	Pack of 10 shelves for use with vertical plate racks	N/A



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