sample management
automated modular microtube storage and handling

natural innovators
TTP Labtech’s sample management portfolio consists of a range of innovative products and peripherals designed to store, transport and process your samples.

**Sample Management Solutions for the Laboratory of the Future**

**Storage and Processing**

Our instrumentation is ideally suited to the storage and processing of biological and chemical reagents, including solubilised chemical compounds in DMSO and water, purified DNA, RT-PCR primers, proteins and antibodies.

**Robust Technology**

At the heart of these products is TTP Labtech’s unique pneumatic technology, using a cushion of compressed air or nitrogen and a system of flexible tubes to transport microtubes. This makes our instrumentation extremely reliable and robust compared to traditional systems that use robots. Our equipment minimises the use of moving parts that can malfunction in refrigerated conditions and our proven technology ensures that end users will have maximum uptime and availability of their systems.

**Modularity**

Modularity is a key benefit of TTP Labtech’s storage systems. This provides flexibility and enables the storage capacity to expand in response to your storage needs. As your library grows, throughput actually increases! Each individual module has an independent cherry-picking facility, which means that if other modules are temporarily unavailable (e.g. whilst being serviced), the remainder of the library is still available. Moreover, if laboratory requirements change then relocation of the system is straightforward.
automated modular storage from ambient to -80°C!

comPOUND® for all your storage requirements from ambient down to -20°C.

arktic secure -80°C storage for compact biobanking.
arctic for automated -80°C storage

arctic is TTP Labtech’s new modular store, providing a low footprint, high capacity solution to -80°C biobanking. It offers fast automated cherry-picking of individual samples.

Using TTP Labtech’s proven pneumatic transport technology, arctic gives you unrivalled robustness and reliability for all your -80°C storage requirements.

TTP Labtech’s arctic offers you the quality and robustness of its comPOUND® sample store, but now at -80°C.
arktic offers you

- Outstanding high density storage: up to 95,000 0.5 mL or 60,000 1.0 mL samples per module
- Ultra-low temperatures: samples are kept at -80°C until they are ready to be delivered
- Automated sample retrieval: pre-sorted racks of up to 96 tubes can be dispensed in under 3 minutes. Individual microtubes can be cherry-picked and delivered from store within 60 seconds
- Sample integrity: samples are stored in dry air or nitrogen in a hermetically sealed environment
- Secure sample tracking: 2D bar-coded microtubes and easy to use software ensure easy sample identification and tracking
- Small footprint: measuring just 0.8 x 1.3 m, arktic fits neatly into an bench sized space in your laboratory
- Expandability: modular system enabling easy expansion as your sample repository grows
- Flexibility: self-contained units can be sited anywhere and easily relocated as your storage requirements change.
comPOUND®: fast, flexible and expandable sample storage

comPOUND® is a compact, modular, high-density, hermetically-sealed microtube store providing secure, high-speed cherry-picking and delivery of sample tubes.

**reliability**

The unique comPOUND® storage system is based on TTP Labtech’s robust and reliable pneumatic technology. Microtubes are stored and retrieved without robotic access to the sealed environment, ensuring that it is not disturbed. This has the major benefit of minimising the number of moving parts in the store’s environment, greatly improving reliability.

**remote sample delivery**

TTP Labtech’s pneumatic technology also allows tubes to be delivered to the laboratory from a remote store sited many metres away. With the mechanical parts and the refrigeration system located outside the temperature controlled environment, comPOUND is designed to have maximum uptime and availability. In the unlikely event of a fault, it can be rapidly diagnosed and repaired (often remotely through VPN) without the need to open the storage unit and compromise the internal temperature.

**sample integrity**

Samples are stored in dry air or nitrogen in a hermetically sealed environment. Each comPOUND module has its own individual cherry-picking facility and only the microtube of interest is moved. The cherry-picking capability works independently of the on-board refrigeration system.
comPOUND® provides a reliable, efficient and flexible storage solution for biological samples and chemical compounds.

**key features**

- Reliability: the system is based on well-proven and robust pneumatic technology
- Modularity: each store is a self-contained, temperature-controlled inert environment
- High density: a maximum storage capacity per module of 200,000 0.5 mL tubes, 100,000 1.4 mL tubes or a mixture of the two
- Scalability: additional modules can be added and linked together in response to growing library size. Each module has its own independent cherry-picking capability
- Speed: cherry-picking of microtubes is fast, averaging one tube from 100,000 in 5 seconds
- Linking of additional modules increases sample throughput, as they work independently in parallel delivering to a common point
- Flexibility: samples are stored at a user-defined temperature between ambient and -20°C. Microtubes can be retrieved in any user-specified format ready for further processing
- Confidence: each microtube is uniquely 2-D bar-coded enabling full sample traceability
- Simple file-based interface allows integration into any LIMS or database.
Need to make assay plates directly from your microtube library?

comPILER® uses our proven pneumatic technology to rapidly assemble cherry-picked microtubes from comPOUND® stores into racks for reformatting by a liquid handling system of the user’s choice.

Microtubes are transported to comPILER which then thaws, centrifuges and decaps the tubes, flushes them with argon and presents them to a third-party liquid handling robot.

When processing is complete, comPILER regasses, recaps and returns the microtubes to the comPOUND store. comPILER can connect up to 12 comPOUND modules simultaneously, giving rapid access to a library of 1.2 million samples. Parallel processing allows the system to retrieve, process and store over 20,000 microtubes in 8 hours. comPILER can work with any liquid handling system with an automation interface.

**benefits**

- Localised micro environmental control ensures samples are never exposed to the raw atmosphere, minimising sample degradation
- Walk-away operation
- comPILER’s modularity allows each processing station to operate independently and enables the system to be configured to suit each user’s application
- Offers true “Tube-To-Plate” processing.
**comSTACKER**

Walk-away loading and unloading of your store without a robot.

comSTACKER is a flexible add-on unit for comPOUND® storage modules. It enables the unattended automatic removal and replacement of tubes from comPOUND into racks within the unit.

comSTACKER has a removable cassette that holds up to 10 standard SBS racks and an adaptor plate allowing both 0.5 mL and 1.4 mL microtubes to be retrieved and stored. Racks do not need to be full to capacity and each cassette slot does not need to be filled, as ‘absent’ racks are simply skipped over. comSTACKER can be easily retrofitted to any comPOUND store via two fixing brackets to the front door and the unit can be readily removed for maintenance or if access is required. comSTACKER can work in harmony with comPANION and comPILER if required.

**comPANION**

Remote rack handling and delivery.

comPANION is a remote device that receives microtubes from comPOUND modules and arrays them into SBS footprint racks. It can also return racked tubes to comPOUND modules. Microtubes are transported using the pneumatic technology that is central to the comPOUND sample store. This means that each comPANION unit can be remotely located in different laboratories, or on different floors, and can connect comPOUND storage modules in parallel so that tubes in different modules can be accessed simultaneously.

**comMOTION**

An easy interface for further automation.

comMOTION acts as an interface to a variety of robotic rack handlers for integrating comPOUND into a fully automated screening system. It comprises a stand-alone comPOUND module, a comPANION arraying station and a rack handling system, managing racks between comPANION and rack hotels. comMOTION is compatible with most commonly available laboratory robots (such as the Hamilton SWAP and Twister II) and many liquid handlers.
Are you still manually decapping and capping your tubes?

Although your laboratory may have automated capabilities for liquid handling and sample storage, the process of microtube decapping and capping often involves manual intervention for cap disposal and inspection.

decapper and capper are compact bench-top instruments that can be easily incorporated into your automated tube handling applications, or can operate as stand-alone instruments.
Providing you with reliable unattended operation, these automated instruments are suitable for high throughput screening workcells.

These two instruments are easily integrated into third-party workstations and provide an important addition to TTP Labtech’s product portfolio, facilitating automated sample transport in the modern laboratory.

**TTP Labtech’s automated decapper and capper offer you:**

- Fully automated decapping, disposal, purging and cap placement
- Decapping or capping of full or partially filled racks of 96 tubes, processing within 90 seconds
- 100% inspection
- Optional gas purging with an inert gas such as argon for sample integrity
- SiLA interface
- Compatibility with a wide range of commercially available 0.5 and 1.4 mL septum seal microtubes
- Zero cross contamination between samples
- Compact footprint.
### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>comPOUND®</th>
<th>arktic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions (w x d x h):</strong></td>
<td>1200 mm x 1650 mm x 2355 mm (47 x 65 x 93”)</td>
<td>1300 mm x 800 mm x 2000 mm (51 x 31 x 78”)</td>
</tr>
<tr>
<td><strong>Storage vessels:</strong></td>
<td>0.5 mL, 1.4 mL microtubes with 2D DataMatrix barcode</td>
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</tr>
<tr>
<td><strong>Storage and delivery format:</strong></td>
<td>96 position SBS racks</td>
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</tr>
<tr>
<td><strong>Capacity:</strong></td>
<td>Up to 200,000 microtubes/module</td>
<td>Up to 95,000 microtubes/module</td>
</tr>
<tr>
<td><strong>Temperature:</strong></td>
<td>From ambient to -20ºC</td>
<td>From -20ºC to -80ºC</td>
</tr>
<tr>
<td><strong>Mass:</strong></td>
<td>1500 kg</td>
<td>470kg</td>
</tr>
<tr>
<td><strong>Services required:</strong></td>
<td>400 V 50 Hz or 208 V 60 Hz 3-Phase TN-S 3 kW</td>
<td>220-240 Vac 50/60Hz, 1ph 12A</td>
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<tr>
<th>Specifications</th>
<th>decapper</th>
<th>capper</th>
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<tr>
<td><strong>Dimensions (w x d x h):</strong></td>
<td>630 mm x 490 mm x 405 mm (25 x 19 x 16”)</td>
<td>805 mm x 410 mm x 405 mm (32 x 16 x 16”)</td>
</tr>
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<td><strong>Services required:</strong></td>
<td>Compressed air at 6 bar (87 psi) Argon supply for gas purging 6 bar (87 psi) 20L/min 100-230 Vac 50/60Hz</td>
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<tr>
<td><strong>Cap type:</strong></td>
<td>Septum cap</td>
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