

{ APPLICATION NOTE }

Using SPT Labtech's mosquito[®] Liquid Handler with Mosaic Sample Management Software

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Mosaic is Titian Software's comprehensive, customisable, modular sample management software product to control and monitor all aspects of sample storage, preparation and delivery. From small biotech to global pharma, Mosaic helps to provide a seamless, error-free sample supply chain and audit trail. Mosaic software is a tailored solution for all sample management requirements, configured through expert consulting services.

Mosaic SampleBank and Mosaic FreezerManagement are Mosaic packages, optimised and pre-configured for rapid deployment:

- FreezerManagement keeps track of samples in freezers and provides a comprehensive audit trail as samples are accessed and aliquoted.
- SampleBank provides full inventory tracking capabilities coupled with sample ordering and workflow management in a simple package. It offers seamless start-up and ongoing performance for busy sample managers.

Mosaic's modular approach means that it is simple to upgrade or extend the software's functionality whenever it is needed.

Introduction

Mosaic sample management software tracks liquid handling operations performed by instruments or users within a Mosaic workflow. Pipetting operations such as individual well-to-well transfers, plate replication, transfers from microtubes to plates, etc. can be achieved in a variety of ways using Mosaic.

This application note gives an overview how the SPT Labtech liquid handling device mosquito can be integrated in Mosaic to fulfil your liquid handling operation workflows.

Titian is the industry leader in providing sample management software for the life sciences. Using Mosaic software, our customers see significant benefits in terms of their throughput, response times, error rates, labour costs and in the sample conservation performance of their sample banks. We also use our experience of integrating laboratory instrumentation and robotics into our systems to ensure that customers make best use of their investment in research and development technologies.

Mosquito Liquid Handler

- Performance of serial dilutions and plate replications
- Accuracy and precision at low volume ranges
 - 25 nL–1.2 µL (LV and X1 models), or
 - 500 nL– 5 µL (HV and X1 models)
- Liquid handling in 96, 384, 1536 well format
- Dead volumes are minimised to under 0.3 µL
- Disposable micropipettes guarantee zero carry-over between samples
- No need for liquid class setup as positive displacement pipetting removes liquid viscosity considerations
- Automatic pipette tip exchange



Mosaic and SPT Labtech mosquito integration

Mosaic sample management software brings the benefits of end-to-end inventory and sample tracking to the mosquito. The powerful Mosaic workflow management system allows the mosquito liquid handling robot to be used in a multi-stage workflow for sample processing involving other machines and/or manual pipetting. Mosaic provides dedicated worklists to the mosquito software to perform precise pipetting instructions. As with all actions in Mosaic, mosquito jobs are recorded in a comprehensive Mosaic audit trail to ensure the integrity of your process.

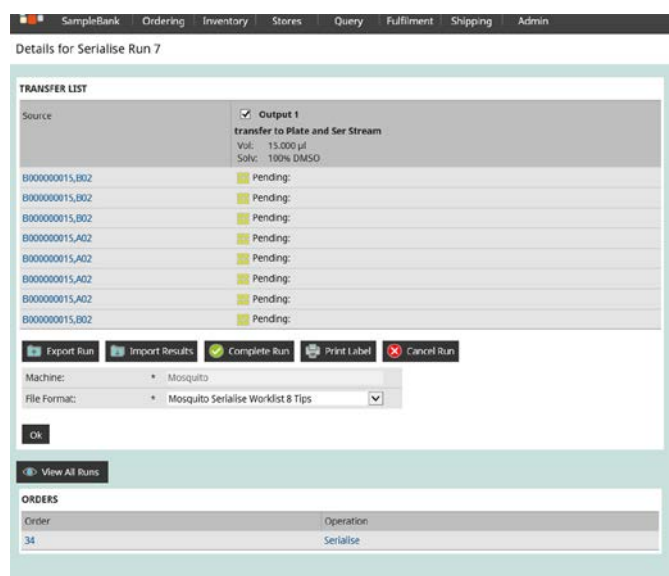
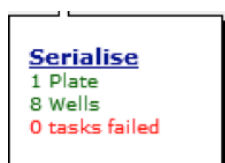
The key benefits to this integration are:

- Automatic generation of a worklist of transfer for the mosquito, based on labware in the Mosaic inventory
- Import mosquito transfer results file back into Mosaic inventory to complete operations
- Automatic creation of a specified dilution series on a plate
- The ability to quickly and easily replicate plates for other sample management or liquid transfer processes
- An intelligent tip-changing strategy that minimises tip waste by applying only to substance transfers and not solvent-only ones
- Leverages the powerful mosquito protocol system to allow the advanced range of settings such as aspirate/dispense mixing and piston speeds dependent on substances and solvent used
- Use of integrated barcode scanner enables automatic import of the mosquito transfers

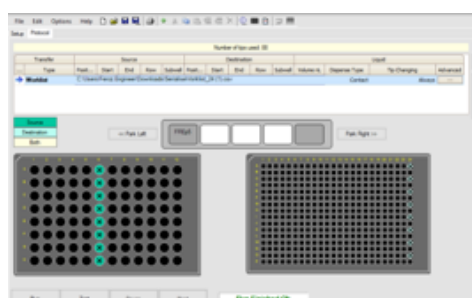
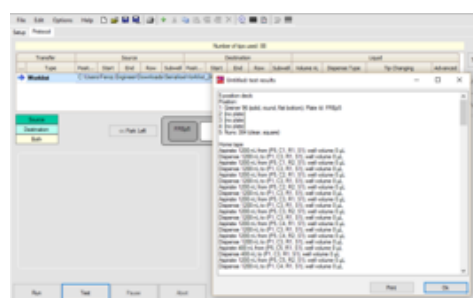
Performing mosquito liquid handling workflows in Mosaic

The steps that an operator undertakes to fulfil an order workflow step on a mosquito are as follows:

- 1) Select the desired order workflow step in Mosaic
- 2) Select the desired inputs and outputs to fulfil in the run. Choose a mosquito device and create the run
- 3) Export a mosquito worklist for the run



- 4) Switch to the mosquito application
- 5) Select a pre-configured mosquito protocol
- 6) Import the mosquito worklist and start the process



- 7) Wait for the run to complete. Then either load the results file into Mosaic or - if using an integrated barcode scanner - allow the results to be automatically processed by Mosaic to update the inventory.

Machine:	*	Mosquito
File Format:	*	Mosquito Serialise Report 8 Tips
Auto Confirm:	*	<input checked="" type="checkbox"/>
Confirm Error Action:	*	Halt
Confirm Warning Action:	*	Halt
Select a file:	*	<input type="text"/> Browse...

Summary

The use of Mosaic sample management software along with the SPT Labtech mosquito provides error-free pipetting work lists, advanced tip usage and automated data processing, resulting in auditable inventory updates.

Mosaic users are able to:

- Define and obtain the outputs that they are looking for
- Maintain a highly accurate inventory by capturing precise volume transfers
- Track every sample preparation step via a comprehensive audit trail

Titian's development efforts never stop as we continue to advance Mosaic toward higher levels of efficiency and practicality for the user. The collaborative relationship between Titian and SPT Labtech continues to ensure that new applications are made available on a timely basis, and we pride ourselves on taking into account customer feedback for all Mosaic modules to drive our product to be the best it can be. It's all part of Titian's commitment to providing innovative solutions that make life easier for sample management professionals.

Notes



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