Waters™

응용 자료

Keeping Track of Fractions with Barcodes

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief demonstrates how barcodes can be used with the FractionLynx Application Manager

for MassLynx Software to streamline the purification process. We discuss the introduction of barcodes to the system and how those barcodes can be used after fraction collection.

Benefits

By using barcodes, samples can be traced through the multiple stages of purification. The tube barcoding reader in FractionLynx improves sample tracking, minimizes errors, and improves integration into existing automation systems.

Introduction

Today's analytical development labs are producing large numbers of samples that often need to be purified by HPLC. Collection of these purified samples, or fractions, can be in single tubes or across multiple tubes, depending on the samples and the technology available to perform the purification. It is necessary to track these fractions through the multiple stages of the purification process, including dry-down and weighing. Barcodes have become increasingly important in this fraction tracking. In many companies, individual fraction tubes are barcoded, along with the plates holding the tubes. Barcoded tubes can be easily weighed by robotic systems before being used, simplifying the weighing of fractions.

Previous versions of software allowed the rack barcode to be carried through the process but not the tube barcode. New software has been developed to allow tube barcodes from robotics systems to be imported into FractionLynx and to export those barcodes from FractionLynx into results reports.

Results and Discussion

In FractionLynx, barcodes can be used to identify individual collection tubes, an entire collection plate, or both. The use of barcodes is enabled in the FractionLynx Collection Control window. Once enabled, you can assign barcodes to the fraction collector bed whenever the bed is reset.

The barcode generator associates tube barcodes with plate barcodes. By doing so, you only need to scan the plate barcode for all its tube barcodes to also be imported into FractionLynx.

The first step is to define the plate. This tells the software which plate type you are using and how many

tubes it holds. The tube barcodes can be entered by importing a text file containing the tube numbers (location) and the tube barcodes. This text file can be generated manually or can come from a robotics system.

Once the fractions have been collected, the plate and tube barcodes can be viewed in two ways. There is a real-time display of barcodes in the Collection Control window. Figure 2 shows how to view the barcodes in this window. Hovering the mouse pointer over a plate in the bed display window will display a tooltip showing the barcode of that plate. Hovering over a fraction tube will display a tooltip showing the barcode for that tube.

The second place the barcodes can be viewed is in the FractionLynx report. Both the rack barcode and the tube barcodes can be seen in the Tube view of the Fraction Collection Results pane (Figure 2). These values can also be included in the printed report and easily exported to liquid-handling systems for dry-down and weighing, or to LIMS systems for reporting and archiving.

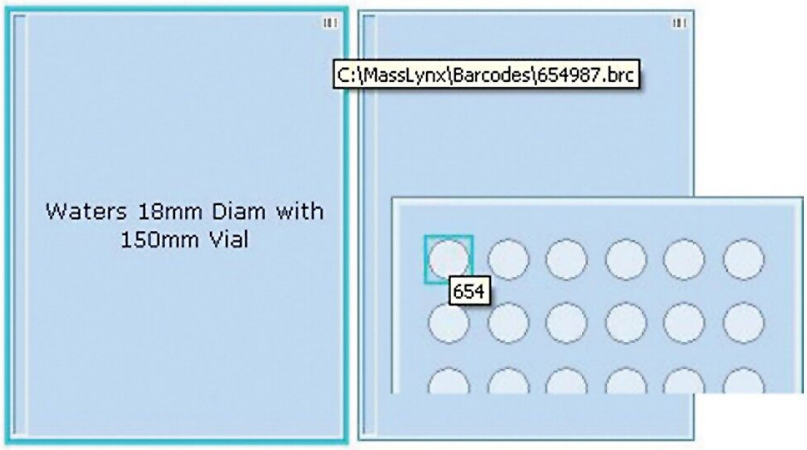

Figure 1. Plate and tube displays showing barcode pop-ups.

Tube Trigger	Original Target	Ion Mode	Start Time	End Time	Collection Site	Export Tube	Tube Volume	Rack Barcode	Barcode
384.0000	383.0000	Timed	0.50	0.51	1,1:5	NO	0.20	684523	65
533.0000	532.0000	Timed	0.51	0.68	1,1:6	NO	3.40	684523	4

Figure 2. Tube view in fraction collection results pane.

Conclusion

Fraction tubes are barcoded so that they can be traced throughout the multiple stages of purification. Tubes can be weighed before they are used, simplifying the weighing of the collected fractions. Including the tube barcodes in FractionLynx improves sample tracking and minimizes errors. It also improves integration into existing automation systems. Once the sample is dried down, the tube can be weighed to determine how much fraction was collected without transferring the dry sample, because the weight of the barcoded tube is known.

Featured Products

FractionLynx <https://www.waters.com/513795>

MassLynx MS Software <https://www.waters.com/513662>

720003861, January 2011