

OPTIMIZED FRACTION COLLECTION FOR PREP HPLC

Collection Of Bulk Pure Products Into Bottles And Contaminants Into Individual Tubes



TECHNICAL NOTE TN228

TECHNICAL FEATURES

- The ability to collect fractions into tubes and bottles

TECHNICAL BENEFITS

- Improve purity and yield of the final product
- Reduce re-analysis time of fractions

Gilson Purification

A software upgrade to Gilson's TRILUTION® LC v4 is now available, which provides complete control over the fractionation and destination of HPLC fractions.

In preparative purifications, it is common to collect fractions at high flow rates in relatively small tubes to spread out the peak into many fractions and pool the purest ones for further processing. However, if the sample to be purified contains minimal contaminants, it is desirable to collect the major product directly into a larger vessel.

With this software upgrade, it is now possible to collect the purest part of the peak into a bottle(s) (see Figure 1, blue section) while collecting the front and rear of the peak into several tubes (see Figure 1, yellow sections) - perfect for the final stage of purity enhancement of a major component.

The software modification allows the peak to be divided into three sections: the front, middle, and rear; and to collect each section into different types of vessels. This software is specific for modular Gilson preparative HPLC systems controlled by TRILUTION LC v4.

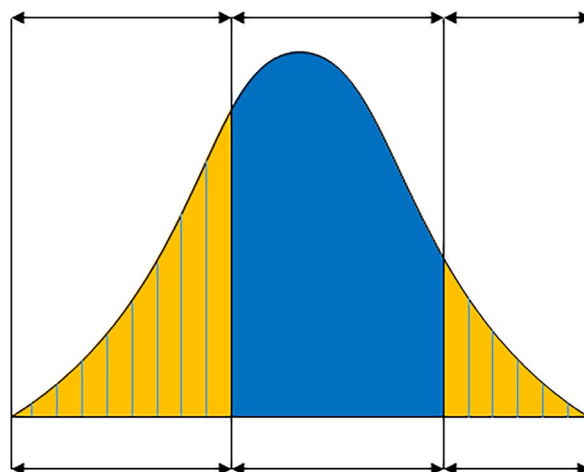


Figure 1

Collection of Peak Into Different Vessels

Two VALVEMATE® II units are needed to collect into different vessels: one to collect into tubes on the liquid handler and the other, which acts like a fraction collector, to collect the pure product in bottles.

Dividing a peak into front, middle and rear regions, and having the possibility to direct which part goes to what vessel, gives you more control over the purification process.

Suppose a liquid handler does not have enough positions to fulfil fraction collection in one run. In that case, the Gilson fraction collection system can be extended by adding multiple fraction collectors, up to a maximum of 4.

The example in Figure 2 displays the fraction collection zones for a typical chromatogram. The front region is collected into tubes on the liquid handler. The middle region (Figure 3) is collected into a bottle, and the back region (Figure 4) is again collected into tubes on the liquid handler. The second peak (Figure 5) has also been collected according to the same settings.

In this example, fractions were collected by level. However, it is also possible to collect based on slope or conditional logic.

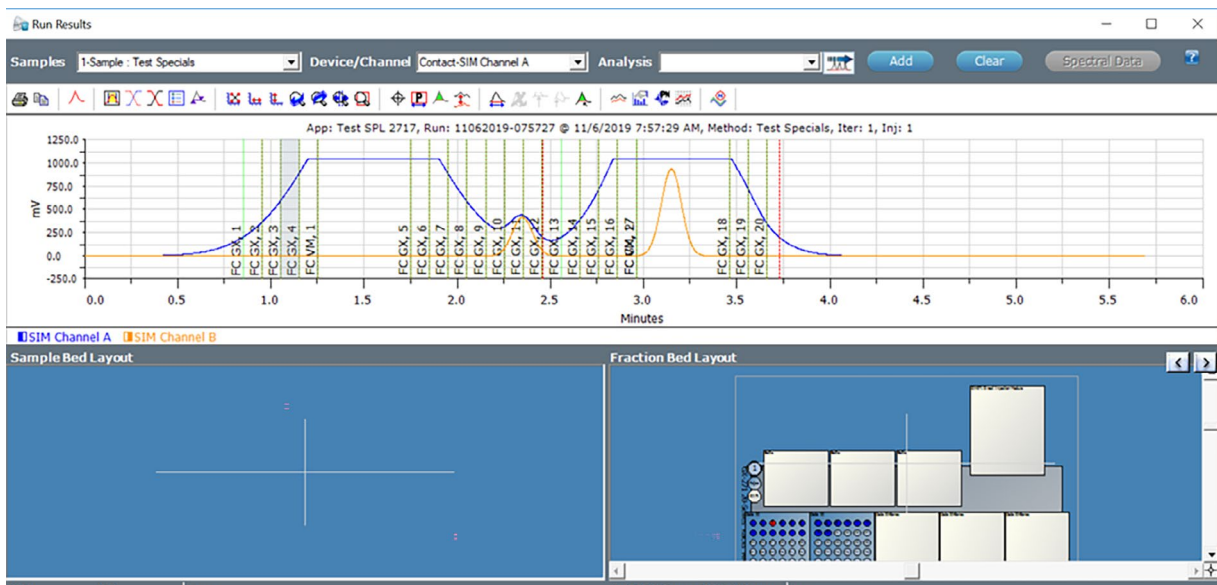


Figure 2

Results Showing Fraction Collection

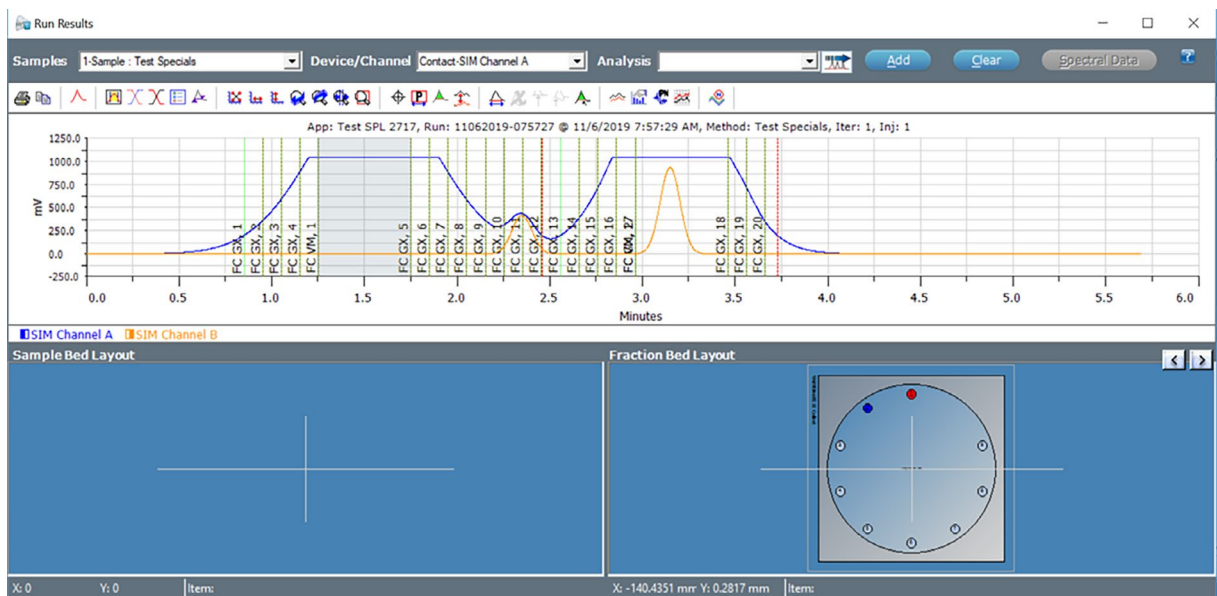


Figure 3

Results Showing Fraction Collection

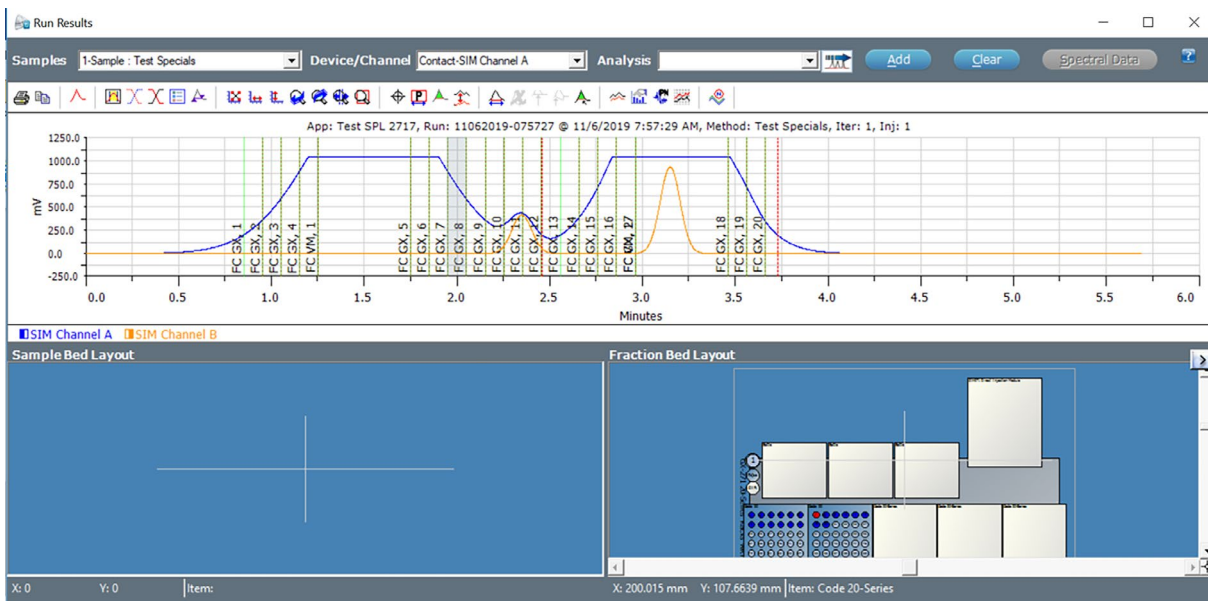


Figure 4
Fraction Bed Layout - Liquid Handler

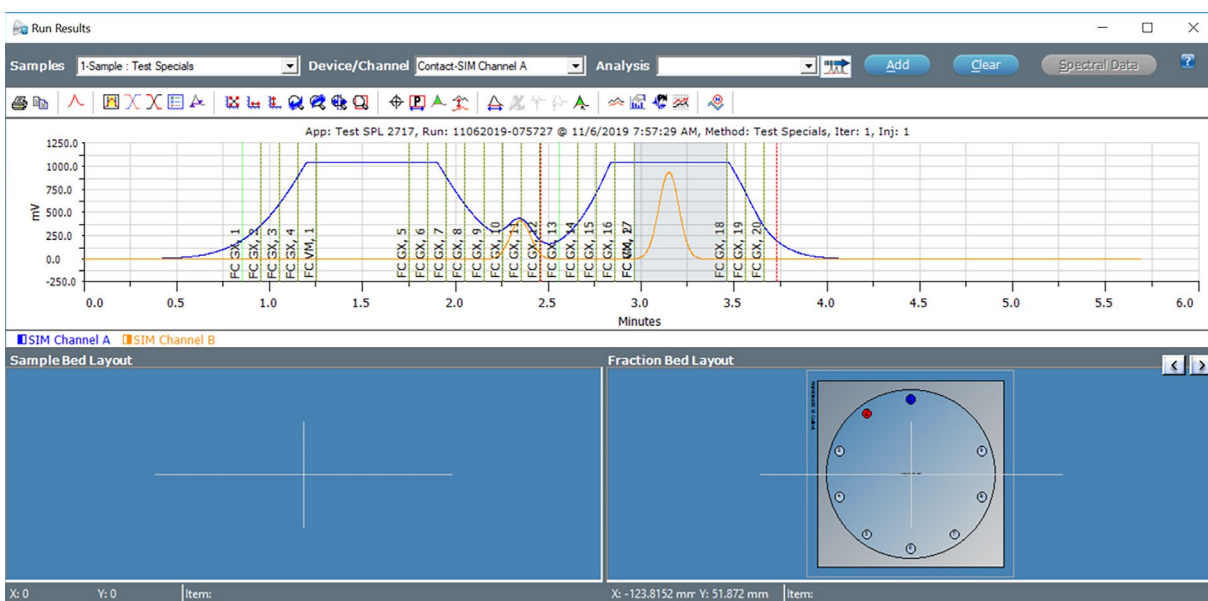


Figure 5
Fraction Bed Layout - VALVEMATE II Collect (Peak 2)

This software modification adds extra dimensions to the fraction collection possibilities allowing you to set conditions according to specific requirements for synthetic compound purification.

For more information about obtaining this software modification for TRILUTION LC, please [contact us](#) or your local Gilson account manager.