

FlashPure cartridge connection to an Isco CombiFlash® Instrument

This document does not replace the operation manual. Read the operation manual before operating the instrument and follow the instructions to ensure safe and trouble-free operation.

FlashPure cartridges

The FlashPure cartridges feature a standard luer lock connection on top and a luer slip connection at the bottom. The luer connection allows to use the cartridges with flash instruments of all brands.

This document describes how to program the PeakTrak software on an Isco CombiFlash® instrument with FlashPure cartridges.

FlashPure default flow rates

The default flow rate is allowing the highest separation power (resolution).

The default flow rate is not suitable for all applications. Reversed phase solvents, such as a mixture of water and ethanol, trigger a back pressure increase and hence force the user to reduce the default flow rate not to exceed the maximum pressure limit of the cartridge.

The default flow rate of each FlashPure cartridge type can be found in the "FlashPure technical data sheet".

FlashPure loading capacities

Loading capacity describes how much sample in g can be loaded on a cartridge. It is the x% of the total column silica weight.

	EcoFlex Silica	EcoFlex C18	EcoFlex Amino/ Diol	Select Silica	Select C18
Loading capacity	max. 10%	max. 2.5%	max. 5%	max. 30%	max. 5%

FlashPure column volumes

The column volume (CV) is the volume inside of a packed cartridge or column which is not occupied by the media. With the column volume, it is possible to calculate the amount of volume of mobile phase that is required to elute a compound from a cartridge.

The column volume of each FlashPure cartridge type can be found in the "FlashPure technical data sheet".

FlashPure back pressure

The FlashPure cartridges have a defined maximum back pressure on the cartridge label or in the "FlashPure technical data sheet". **NOTICE! Never exceed the back pressure limit.**

The FlashPure cartridges do not feature a RFID tag and have to be selected manually in the PeakTrak software.

The default back pressure for manually selected FlashPure cartridges with the Isco CombiFlash® instruments are:

- NextGen: max. 100 psi
- Rf: max. 5 psi

The FlashPure cartridges should never produce back pressures above 100 psi. The PeakTrak software automatically reduces the flow rate in case the back pressure exceeds the limits of the instruments.

Flash method

A typical flash method consists of four steps:

- **Equilibration** - preparation of the cartridge
- **Injection** - loading of the sample
- **Separation** - gradient step
- **Rinsing** - cleaning of the cartridge

The following rule exists related to the column volume:

Flash method	Column volume	
Equilibration	3 – 5x	with starting condition of the gradient of weak solvent
Injection volume	max. 0.1x	
Separation	3 – 6x	of gradient from weak to strong solvent
Rinsing	2 – 3x	of strong solvent

Run length

The run length corresponds to the time of the separation excluding equilibration and rinsing.

Run length (min) = Total column volume (mL) ÷ flow rate (mL/min)



Cartridge size	Column volume
4 – 24 g	6x
40 – 80 g	5x
120 – 220 g	4x
>330 g	3x

Connecting with an Isco CombiFlash® instrument

- ▶ Remove the two plugs on the FlashPure cartridge.
- ▶ Install the FlashPure cartridge on the Isco CombiFlash® instrument. For more information, see "*additional documentation from the supplier*".
- ▶ Select the cartridge media and size manually.
 - ⇒ PeakTrak shows the message **Unable to identify RediSep Rf column**.
- ▶ Press **MANUAL SELECT**.
- ▶ Select media type.
- ▶ Select the cartridge size.
- ▶ Enter the flow rate. See "*FlashPure technical data sheet*".
- ▶ Calculate the run length.
- ▶ Follow the FlashPure loading capacities.

Please note that the designation CombiFlash® instrument is a trademark for Teledyne Instruments, Inc. DBA Teledyne Isco, and are used only to identify for purposes of compatibility.