

PTFC-2/8 and PTFC-16 Fraction Collector



The perception of automation in dissolution testing differs greatly from user to user. The most labor intensive stage is taking samples at the specified time periods as found in the company SOP (Standard Operating Procedure). This involves the taking of 6 samples and according to the USP and most other Pharmacopoeia, there is a strict requirement for a fast or parallel start, so that accurately timed sampling for all testing positions may be achieved. At this point the operator must also consider either replacing the collected sample volume with fresh media in the dissolution vessels or to keep an accurate record of the volumes taken from each vessel, to be able to calculate the correct concentrations of subsequent sampling cycles. The PTFC fraction collector is ideally suited to take over these steps from the user.

There are two models of the PTFC fraction collector, the eight station PTFC-2/8 and the 16 station PTFC-16 instrument equipped with a second dispensing arm. Connecting a PTFC-2/8 fraction collector to a PT-DT70, PTWS 100D, PTWS 100S, PTWS 610, PTWS 820 or PTWS 310 series dissolution bath offers programming of any sampling time for up to 20 sequences. Using the PTFC-16 fraction collector connected to a PTWS 1210 or PTWS D610 gives the possibility to sample 10 cycles from up to 16 sampling positions. In case you would like to use another brand of bath, this is no problem, as you can use the PTFC keyboard and directly enter your sampling sequence in equal intervals (like 10 - 20 - 30 minutes) without the need of interfacing the two instruments.

The tubing connection should be made of PTFE, FEP or similar materials. Pharma Test offers complete tubing systems ready to install for any of our baths.

The Benefits of Automated Sampling

Correctly positioned sampling probes immersed inside the dissolution media only at the time of sampling (using the EPE automated sampling manifold available for PTWS 310, PTWS 610, PTWS820, PTWS 1210 and PTWS D610), equal sampling times and standardized solvent transport offer a high standard of reproducibility and reliability for dissolution tests. Also from the economical perspective it will become clear, that automated sampling offers great advantages as the operator only needs to be present to fill the vessels and to introduce the samples. Once these tasks have been completed, the system operates fully automatically and independently. Using a PTFC fraction collector means that the way of later analysis is flexible for either spectrophotometry or LC technologies. The filled vials within the collector dish are manually moved to the analyser and either manually injected or transferred to an auto injection system. Using an optional kit for the PTFC fraction collector it is also possible to collect directly into standard HPLC vials.

Operation Principle

As soon as the samples have been inserted into the vessels of the dissolution bath, the system will start its automated operation. The sampling times have been programmed either at the Pharma Test dissolution bath or directly at the PTFC fraction collector. After the start of the test a command signal is sent from the PTFC fraction collector to start the pump. Now the pump will start to fill up the tubing, while the solvent circulates therein. When all tubing is filled-up, the dosage tube line is opened and the samples are collected in the vials inside the collector dish. Depending on the system configuration, after dosing the volume will be refilled back into the vessels using fresh medium. For the media replacement functionality, the PTFC has to be equipped with the optional E-VEN valve system. At the end of a cycle all tubing is emptied. The system is waiting for the next sampling time. All vials are covered during the test. The vial dish can be easily removed.

The PT-SP Syringe Pumps Offer First Class Accuracy



The PTFC can be used with the PT-SP syringe pumps, peristaltic pumps or CAT valve-less piston pumps. The PT-SP syringe pumps will give first class accuracy in terms of volume removed from the system when samples are taken. Whenever automated sampling is required the PTFC system together with a PT-SP syringe pump offers an ideal choice. The control of the fraction collector in regards to sampling times, dosage volumes, refilling and pump drive is done via the PTFC keyboard and display or directly from the connected Pharma Test dissolution bath. Enter up to 20 different sampling sequences with the same time delay and connect the system tubing and pump together for an automated operation. When using the PTFC fraction collector together with the PT-SP syringe pumps, the media switching valves of the standard PTFC instruments are not required. Therefore the special PTFC-2/8SP and PTFC-16SP models exist

which do not include the valves and are available at a lower price compared to the standard PTFC

models. For media replacement a second PT-SP is linked to the first in these systems. The E-VEN system is not required for the PTFC SP models.

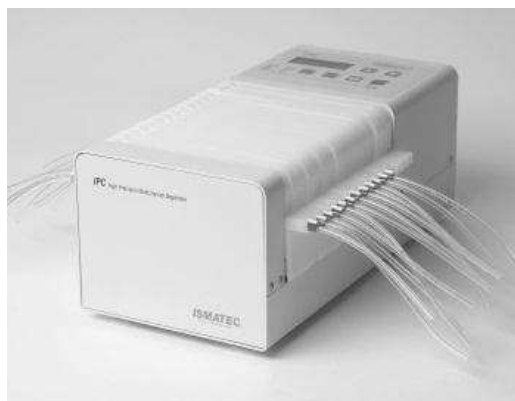
CAT Valve-Less Piston Pumps



The CAT8 and CAT12 multiple piston pumps offer another accurate solution for sample removal and transfer. Exact volumes may be transferred from the sample vessels to the PTFC fraction collector. In this way, if vessel refilling is not used, exact volumes of sample removal can be recorded for subsequent concentration calculations. This system offers a more secure sampling method for non-closed loop systems where the volume removed is calculated from an apparent flow rate over a fixed time period (as with peristaltic pumps). The CAT piston pump is not dependent on pump tubing quality and is also a good alternative when active materials are known to absorb on tubing materials such as Tygon or Silicone. It's usually supplied with either PTFE or FEP tubing installation. The pump is supplied with 8 or 12 working channels and a separate channel for rinsing or flushing. Each position contains a miniaturized precision pump element which ensures reliability and accurate sample delivery on each of the working channels. The valve-less micro-piston

pumps are made of ceramic and therefore highly inert for all types of common dissolution media. The rinse pump is invaluable in keeping the system clear of crystallizing material especially when using buffered media. This pump can operate as a stand-alone device (contact closure) or be controlled by either the PTFC Fraction Collector directly or by dissolution software WinPTFC32. The sample volumes are removed with great accuracy (<1%) and excellent precision (<0.5%).

Using Peristaltic Pumps as a Cost Effective Alternative



Instead of using the PT-SP syringe pump or the CAT valve-less piston pump, a multi-channel peristaltic pump with flexible pump tubing may be used for solvent transportation. Although the quality of the peristaltic pumps available today has vastly improved, it must be stressed that the pump is still working with flexible tubing. Therefore at the start of each test, it should be determined that the flow rates are identical for each channel and that the tubing itself is in good condition and likely to last for the duration of the procedure. A good tip for long tubing life is to always release the pressure rollers from the tubing overnight or whenever the system

is left not in use for extended periods of time. Of course also this pump is controlled by the PTFC for start/stop and reverse operation. Auto media refilling is also possible using the optional E-VEN refilling

valve system in the PTFC. Using peristaltic pumps is a cost effective alternative for systems for example with a limited amount sampling cycles where the accuracy provided by the peristaltic pumps is still sufficient.

The Ismatec IPC8, IPC16 or IPC24 series of peristaltic pumps offer the easy release individual steel cassette system for easy service. The screw adjustment facility to correct dosing volume helps to maintain precision for each channel. The necessary control cables for sample transfer using this type of pump (as well as for other major brands) are available from Pharma Test as well.

Advantages

Some of the highlights the PTFC offers are:

- Automated sampling of max. 20 cycles each 8 vials
- Silicone cover plate to protect sampled media
- Easy to load and unload
- Rigid pinch valves, easy to maintain
- I/O port for external sequence start function
- Manual programming of sampling times to connect the PTFC to any Dissolution Bath
- Automated sampling eliminates human errors as equal sampling times and standardized solvent transport offer high reproducibility

Technical Data PTFC Fraction Collector

Parameter	Specification
Number of Samples	Max. 20 (8-vessels) - Max. 10 (12-vessels)
Pre-Time (tube flush) setting	1 Sec. - 999 Sec.
Fill- Time (dosing) setting	1 Sec. - 999 Sec.
Interval Time setting	1 Min. - 9 Hrs. - 59 Min.
Number of Sampling	1 - 20
Vial Size - Diameter	Ø 12 mm
Vial Size - Length	Standard 75 mm - Optional: 165 mm
Net/Gross Weight	PTFC-2/8 - 15kg PTFC-16 - 18kg
Packaging Dimensions	Approx. 90 x 67 x 80 cm (D x W x H)
CE / EMC Certification	All CE / EMC Certification provided
Validation	All IQ & OQ documents included

We reserve the right to make technical changes without any prior notice.