

## PTF 100

### Single Drum Tablet Friability Test Instrument

PTF 100 is a single drum tablet friability and abrasion test instrument. It is manufactured in compliance to the USP <1216>, EP <2.9.7> and JP <14> Pharmacopoeias. The instrument features an automated sample discharge at the end of a test and the possibility to connect an analytical balance.



One of the testing criteria for mechanical strength of tablets and cores according to the USP <1216>, EP <2.9.7>, JP <14> and other pharmacopoeia is friability and abrasion testing. During the process of coating, transportation and packing the tablet will lose some amount of weight. To measure this weight loss, the samples are counted and weighed. Then the friability test is performed following the

individual monographs of the relevant Pharmacopoeia. The tablets are tumbled at each turn of the drum of the friability testing instrument by a curved baffle that extends from the middle of the drum to the outer wall.



Clean the samples from any dust prior to the test. Weigh the samples and introduce them into the drum of the instrument. The drum can easily be opened for loading and cleaning. Alternatively it is possible to use the discharge opening to load the samples without opening the drum. Select a test method and start the run. The LCD with color-changing backlight shows the test status and results. Once the test is finished the drum revolution stops and the samples are discharged into a collector. The collector is made from clear Plexiglas and is magnetically fixed to the instrument base plate. It can easily be removed for cleaning and secured back into the proper position. The samples then have to be inspected for broken tablets, de-dusted and weighed again. The weight difference before and after the test is determined as friability; this usually should not exceed 1%.



#### **Optional 10 Degree Angle Stand**

Tablets of a weight >650mg or with a bigger diameter or odd shaped samples are tested while the instrument is raised to an angle of 10° on one side using collapsible feet.

### Optional Abrasion Drums

The standard supply scope includes the friability (also known as “Roche”) drum, but an abrasion drum is available as an option. The standard friability drum causes the samples to roll and fall during the test while the abrasion drum continuously puts the sample under stress by contact with lamellas.



### Different Speed Settings

A silent DC geared motor rotates the drums at a fixed speed of 25 rpm or at a selectable speed (setting can be locked). The actual drum is made from Plexiglas (Perspex) and is separated into two parts, the drum body and a removable cover, which opens to fill and clean the drum from the inside when required. The instrument itself is made from high quality stainless steel which fully meets the current GLP requirements. A friability drum with an additional anti-static coating is available as an option.

### User Interface with Click Wheel Navigation

PTF 100 is operated by using a click wheel to navigate menus on the LCD screen and by functional keys to shortcut frequent operations. The display is backlit in changing colors that show the instrument status in a familiar traffic light system (green, yellow, red). Navigating the menu is quick and simple. The color-changing display makes it easy for the user to see when his input is required to proceed.

The instrument has a method and a user management system. Methods can be programmed, edited and stored directly on the instrument. Users can be created and assigned different user levels according to their roles (method or standard user, only one Admin).



Access to the instrument is protected by a login with username and password. Optionally a quick test menu can be accessed without logging in to the instrument first. This way tests can be performed with the instrument in case user access control and testing according to defined methods is not required.



### **Integrated Report Printer (optional)**

As an option PTF 100 features an integrated report printer to document the test and calibration results. An integrated printer saves valuable bench space in your laboratory. The detailed result report includes the automatic weight loss calculation.

### **Storage Possibilities**

A USB flash drive can be connected to the instrument to save and load methods in .csv-format. Print-outs can be stored as text files. Furthermore instrument firmware updates can be installed and factory settings be restored by using the flash drive without the need for any PC or programming tool.



### **Calibration**

PTF 100 features dedicated calibration programs. The user is guided through each step of the calibration and a report is printed automatically.

The reports are saved on the instrument and can be printed at a later time as well. A programmable qualification interval timer reminds the user to perform the instrument calibration once it is due. Each time the instrument is turned on it performs a quick self-check to ensure it is ready for operation. The result of the self-check can be documented via the optional integrated printer as well.



## Advantages

- » Drum is easy to open for loading and cleaning, alternatively use discharge opening for loading
- » Graphical LCD screen showing actual and target settings
- » Integrated protocol printer reduces bench space requirements
- » Detailed result report including weight loss calculation and evaluation of the results
- » Automated sample discharge at the end of a test run
- » Dual operation mode: number of revolutions or rotation time
- » Variable drum rotation speed or locked speed mode
- » Determine the sample weight by balance to automatically calculate weight loss
- » Programmable qualification interval timer reminds the user to perform instrument calibration
- » Dedicated calibration programs and reports
- » Copy methods between instruments by using a common USB flash drive
- » Export test reports as text files
- » IQ/OQ documents included free of charge

## Features

- » Fully USP <1216>, EP <2.9.7> and JP <14> compliant
- » Determine friability and abrasion (optional) of uncoated tablets
- » Programmable for number of drum revolutions or rotating time
- » Connect a balance to determine the sample weight (optional, weight can be entered manually)
- » Connect USB flash drive to copy methods and store test reports
- » Integrated protocol printer (optional)
- » User and method management system

## Standard Scope of Supply

PTF 100 comes ready to use with the following standard scope of supply:

- » One friability drum made from Plexiglas (optional incl. anti-static coating), in compliance with the USP, EP and DAB pharmacopoeia
- » Comprehensive documentation included (PDF, hardcopies optional):
  - › User manual
  - › DQ/QC instrument compliance test certificate
  - › IQ documentation
  - › OQ documentation
  - › Instrument logbook

## Options

In addition to the standard scope of supply Pharma Test offers a broad range of accessories and options including:

- » Friability drum with anti-static coating (part no. 224-1110)
- » Tablet abrasion drum with lamellas (part no. 224-1120)
- » 10° stand to test large samples (part no. 224-0500)
- » Internal thermo printer (part no. 224-2000)
- » Certified calibration tools

## Technical Specifications

Parameter	Specification
<b>Number of Test Drums</b>	1, right side
<b>Drum Rotation Speed Range</b>	15 – 100rpm
<b>Speed Accuracy</b>	±1 rpm
<b>Number of Rotations</b>	Adjustable 2 – 9999, switchable to time mode
<b>Testing Time</b>	Adjustable 2 - 9999 seconds, switchable to rotations mode
<b>Method Management</b>	Up to 256 test descriptions (methods) can be stored on the instrument
<b>User Management</b>	Up to 32 users with selectable user right levels can be stored on the instrument
<b>Result Data Storage</b>	Store copies of result reports by connecting a USB flash drive
<b>Display</b>	LCD with color-changing backlight
<b>Keyboard</b>	Keypad with function keys and click wheel
<b>Interfaces</b>	USB type A host port to USB type B device port to connect flash drives, for PC communication and firmware updates <sup>1</sup> LAN port for PC communication <sup>1</sup> RS-232 printer port for optional external printer <sup>1</sup> RS-232 balance port
<b>Instrument Housing</b>	Polished stainless steel housing with plastic frame
<b>Power</b>	110/230 Volt, 50/60 Hz
<b>Instrument Dimensions</b>	Approx. 50cm x 42cm x 47cm (width x depth x height)
<b>Packaging Dimensions</b>	Approx. 60cm x 60cm x 50cm (width x depth x height)
<b>Net /Gross Weight</b>	Approx. 16 / 21 kg
<b>Certification</b>	All components certified to USP / EP requirements
<b>CE / EMC Certification</b>	All CE / EMC Certification provided
<b>Validation</b>	All IQ & OQ documents included

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

<sup>1</sup> PC communication and external printer support to be added in future firmware update