



The **PTF 3DR** is a multiple drum semi-automated Friabilator with automated sample discharging option at the end of a test run and an online Balance connecting port. It is equipped as standard with 3 Perspex (plexi glass) Friabilator drums attached to a single drive axis. A DC motor is used to rotate the drum, the rotation speed can be selected as well as the number of drum revolution ob the total testing time.

One of the testing criteria of mechanical strength according to the USP <1216>, EP <2.9.7> and other pharmacopoeia of tablets and cores is friability and Abrasion testing. During the process of coating, transportation, packing etc. the tablet will loose some weight. To measure the weight loss the samples are counted and weighed. Thereafter the Friability test is performed following the individual monographs of the Pharmacopoeia. When finished the samples have to be de-dusted an weighted again. Actually the difference between the weight before and after the test is determined as Friability which usually should not exceed 1%. Tablets of a diameter more than 13 mm are tested while the apparatus is lifted at one side for about 10°.



We offer to the user a series of instruments to meet his requirements. Each of the instrument can be optionally equipped with a Abrasion Drum having a diameter of 20 cm and inside 12 Lamellas. The standard Friability drum causes the samples to roll and fall during the test while the Abrasion drum continuously stresses the sample by abrasion of the lamellas.

PTF 3DR - Automated Tablet Friability Test using up to 3 drums. The standard instrument includes an RS232 Port for an online connection of a Mettler or Sartorius Analytical Balance (0.1mg accuracy). This does allow to weigh the cleaned tablet cores prior and after the test and to receive a printed report including statistical calculation of up to 3 consecutive runs which can be done in one go using the PTF 3DR. A noiseless DC gear motor offering adjustable rotation speed in the range of 20-60rpm does drive the drum axis. The drum is made from Plexiglas (Perspex) and separated into two parts, the drum body and a removable cover, opened to clean the drum from inside when required. The samples are discharged after the test through corresponding holes inside the drum body into a stainless steel collector. The bottom of the stainless steel collector is made from perforated metal to allow the removal of dust and particles which is again collected inside an inox tray. Test information, product description and other entries are done using the alpha numerical keyboard of the instrument. A dual line LCD screen informs the user of each of the data entry steps and the test results.

Principle of Operation...

Use the on-line connection for a balance and a PCL printer. Clean the samples from any dust prior to the test. Weigh the samples using the attached Analytical Balance. As soon as the result has been transmitted to the PTF 3DR introduce the tablets into the drum of the instrument via the filling hole. Program the test information, such as speed, time etc. and start the run. When the test is finished the drum revolution stops and the samples are automatically discharged into individual collectors. De-dust the samples using a brush, after weigh again. The result is immediately displayed and printed in form of a GLP like report including the instruments serial number, date, time, user name and product data. The maximum mean weight loss from 3 consequent tests should not exceed 1%.

Featuring:

- 3 Friability Drums made from Plexiglas (optional incl. antistatic coating), in compliance with the USP <1216>, EP <2.9.7> and DAB pharmacopoeia
- Variable drum rotation speed, range 20 to 60 rpm
- Programmable number of drum revolutions or rotating time
- Alpha numerical keyboard to enter descriptive information
- LCD screen to display test results and data entries
- Choice to do single tests or test series of 3 runs at a time of which a common statistic is calculated
- Individual stainless steel collector incl. sieve type bottom to take all tested samples
- Standard RS232 interface to connect on-line a Mettler or Sartorius precision analytical balance, range minimum 300/600 mg - accuracy 0.1 mg
- Printer interface to connect a Dot Matrix or a PCL DeskJet printer
- RS- 232 interface for data transmittance
- Instrument housing made from stainless steel to meet GLP requirements
- IQ/OQ Documentation included

Options:

- Friability Drum incl. antistatic coating
- Tablet Abrasion drum (no auto-discharging)
- 10° instrument stand
- Qualification Equipment

Technical Data

Display:	LCD Display
Keyboard:	Alpha-numerical and function keys
Key entries:	12 digit product code 12 digit batch number
Interface:	RS-232 port RS-232 socket for online connection of a Mettler or Sartorius analytical balance, range up to 300/600 mg, accuracy 0.1 mg
Printer port:	PCL or Matrix Printers
Drum rotating speed:	adjustable, 20 - 70 rpm
Test Drums:	3
Speed accuracy per minute:	± 1 rpm
Enter total testing time:	1 - 9999 seconds
or enter no. of revolutions:	1 - 9999 revolutions



Abrasion Drum

Weights and Dimensions

Net weight:	19 kg
Gross weight:	25 kg
Packaging:	650 mm x 470 mm x 690 mm

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



PTF 1DR single drum Friabilator

Copy of a typical Report Print-out of 3 consecutive test runs

PHARMA TEST FRIABILITY TEST

PTF-DR

Friability Test
Test Series

Instr. typ	PTF1DR	S/N 10610	04.02.2002	13:20
Speed:	25 rpm	No. of Rot.:	8	
Product:	pl.	Batch-No.:	83	
User:	MO.	No. of Tests:	3	

Nominal Friability: max. 1% of Start Weight

Test 1:		04.02.2002	13:20
No. of Samples:	36		
S. Weight	2.190 g	E. Weight	2.180 g
Mass Loss:	0.010 g	Friability:	0.45 %
Test 2:		04.02.2002	13:20
No. of Samples:	36		
S. Weight	2.191 g	E. Weight	2.175 g
Mass Loss:	0.016 g	Friability:	0.73 %
Test 3:		04.02.2002	13:20
No. of Samples:	36		
S. Weight	2.191 g	E. Weight	2.176 g
Mass Loss:	0.015 g	Friability:	0.68 %

Remarks: _____

Signature: _____