

FOSS



The Complete Chemical Analysis Collection

Sample Preparation

Good results start with sample preparation. Instrumental errors are very small compared to the errors associated with sample preparation. Badly prepared samples will result in large analytical errors. There is no single 'fix all' solution. Most laboratories require several types of mill depending upon the samples to be prepared, and the analysis to be performed. The laboratory mill is an important but often overlooked link in the chain of analysis; so important that at FOSS we regard it as an integral part of the analytical system.



Cemotec™ 1090

The Cemotec™ Sample Mill is specially designed to grind grain and seed samples without loss of moisture. It is an excellent mill for all types of sample preparation where the requirements for fineness and uniformity of particle size are moderate.

- No loss of moisture
- Approved by Swedish National Board of Agriculture

Replacement grinding discs (1003965) and 150 ml sample cups in packs of 100 (10003923) or 500 (10003924) are available.



Cyclotec™ 1093

The Cyclotec™ Sample Mill is designed for rapid, uniform grinding of a wide variety of feeds, grains, leaves, etc. and also for grinding of chemicals, pharmaceuticals and similar products. The Cyclotec offers a very rapid and convenient solution to accurate sample preparation for a variety of analytical techniques, e.g. Digestion, Extraction, Fibre, NIR.

- High speed – 4 g/s with grains
- Narrow particle size distribution with small mean particle size
- Approved for NIR preparation (AOAC 4.2.10 16th Ed.)

125 ml Sample Bottles (10003679) 52/pack; (10000893) 104/pack

Large inlet assembly (10002485) facilitates grinding of forage, silage, straw, foliage etc. Large bottle assembly (10009833) accommodates 500 ml sample bottle (10013478).



Homogeniser 2094 (1-phase, 1500rpm) & 2096 (3-phase, 1500/3000rpm)

The 2094 and 2096 Homogenisers are designed for macerating and homogenising a variety of high moisture, high fat and fibrous samples in 20 - 60 seconds. Application examples include: reduction of forage and dry food and chemical products; homogenisation of meat, fish, fruit, vegetables and prepared foods, including pizza, pies and frozen meals.

- Samples from 0.2 to 2.5 kg (3.5 kg with 2096)
- Blade design ensures vertical & horizontal homogenisation
- Pulse-run mode to handle frozen samples

A variety of blades for different applications.



Knifetec 1095 (20,000rpm with cooling facility)

The 1095 Knifetec™ Sample Mill is designed for the preparation of high fat, high moisture and fibrous samples such as; oilseeds, prepared foods, meat products, fruit, vegetables, grains, seeds, animal feed and petfood are examples of suitable sample types.

- High speed, timer controlled grinding
- Typically 100 ml sample in 2, 5 or 10 second cycles



Selection of rotor blades (standard - 10005980 supplied, sharp – 10008651, small volume – 10013135 & pellets – 10013136); for different applications; and a stainless steel tray (10008467)

For full information about all mills see Mill Collection Brochure 99990730

Digestion

A Tecator™ Digestion System for Kjeldahl and other mineralisation or reflux procedures is based on a Digester with accurate temperature control, ambient to 440°C, and Tube Rack for either 8 or 20 tubes of 100 ml or 250 ml capacity.

Optional 400 ml tube racks are available to fit 2508 & 2520 units and exhausts.

To comply with Good Laboratory Practice (GLP) and Health & Safety (H&S) requirements, we recommend that all Digestors are used with an Exhaust Manifold or Reflux Head, and located in a fume cupboard.

The Tube Rack and Exhaust, or Reflux Head, are positioned above the Digester, saving valuable space.

A 40 place 100 ml tube Auto and AutoLift version is also available.

Auto Lift Systems

Auto Lift systems facilitate highly automated procedures, eliminating heavy and risky handling of hot chemicals.

A Tube Rack with 8 or 20 tubes is placed in the Lift. The software-selected application then fully controls the entire process. The Exhaust Manifold docks with the Tube Rack as they move down into the preheated Digester; and the Scrubber Unit, if connected, starts. The PC Application software has two-way communication with the Digester via the serial RS232 cable supplied. Communication can be achieved through optional Bluetooth modules. The software supports GLP routines and accreditation procedures. Data for date, time, temperature, application used, operator, batch number, and ID number are constantly logged.



Auto Rack Systems

When an Auto Rack system is used in place of an Auto Lift system the typical procedure is as with the Auto Lift system with the exception that the combining & separating of Tube Rack and Exhaust Manifold and the movement to the cooling position is performed manually when the signal is heard. The application selected controls all other functions as with the Auto Lift system.

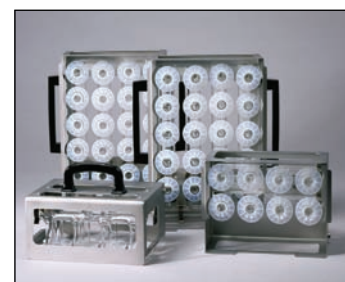


Basic Systems

The temperature and time for the digestion are selected on the front panel. All other procedures, including operation of a connected scrubber, are then performed by the operator once the digestion unit has reached the selected temperature.

Fume Removal and Containment Systems Exhaust Manifolds

Exhaust Manifolds designed for each Digestion Unit facilitate fume removal and containment and are strongly recommended for use with all digestion procedures. The cost of replacement of a fume cupboard which has been corroded by inefficient fume handling is very much greater than the relatively low cost of an approved exhaust. Whilst many users choose to operate integrated systems in the open laboratory, we strongly recommend the use of both exhaust systems and fume cupboards for these operations. This is simply GLP and avoids conflict with local H&S requirements.



Scrubber Unit

The compact bench-top Tecator™ Scrubber is self contained and is therefore unaffected by water supply issues. During digestion, moist and acidic fumes from the connected exhaust are drawn through the Scrubber. Vapours are first condensed and diluted in a large acid trap. Any residual fumes are collected, washed and neutralised before passing through a second small acid trap which protects the vacuum pump in the event that the scrubbing agents are exhausted. The cleaned air is then vented via a tubing outlet. In the interest of GLP and H&S this venting tube should be directed into a fume cupboard. When the Scrubber is connected to an Auto Lift or Auto Rack system, the program will fully control the function including switching from high to low aspiration settings.



For full information about the Digestion Range see Datasheets 99990720 and 1026020

Distillation

The Kjelttec™ series combines the best possible accuracy and precision, with the lowest possible cost/test. There are a number of instruments to match different needs. All units are equipped with a polypropylene splash head, an adjustable steam generator, dilution water and alkali addition together with tube emptying. The patented SAfE feature minimizes the reaction between acid and alkali. Cooling water and distillate control systems together with bellows pumps for reagent dispensing ensure the best possible performance.



Kjelttec™ 8100 Manual Distillation Unit

An economic, easily operated, semi-automatic unit for Kjeldahl and other distillation chemistries such as Sulphur Dioxide, Alcohol, Phenols, Volatile Acids etc. On inserting a tube, closing the safety door and pressing start, the selected programme is executed automatically during the pre-selected time. The distillate is titrated externally.

For full information see Kjelttec 8100 Datasheet



Kjelttec™ 8200 Auto Distillation Unit

A versatile, easily operated, fully automatic unit for Kjeldahl and other distillation chemistries. Insert a tube, press start. The safety door closes automatically and receiver solution is dispensed. The selected programme is executed automatically during the pre-selected time. The distillate is titrated externally with a burette or an auto-titrator which can be connected with optional cable and tubing. The unit can be upgraded, at any time, to a Kjelttec 8400/8420/8460 to fulfil future needs for automation.

For full information see Kjelttec 8200 Datasheet



Kjelttec™ 8400 Analyser Unit

A fully automatic analyser for Kjeldahl and other Nitrogen based chemistries.

The unit includes simultaneous colorimetric titration saving valuable time. The titration module minimises air bubbles and keeps the titration vessel clean with a self rinsing function. The burette can be calibrated according to ISO procedures and overall performance can be validated with the built-in recovery test using standard reference materials. Any network printer can be connected via the ethernet interface for print-out of results.

Kjelttec™ 8400 Analyser with Sampler 8420 or Sampler 8460

The Kjelttec™ 8400 Analyser unit can easily be upgraded with one of the 20 or 60 place autosamplers. The reliable and precise positioning, ergonomic design and easy maintenance provide fully unattended operation and analysis.

The samplers can be used for both 250 ml and 400 ml digestion tubes. To give the highest safety and traceability, the tube rack is taken directly from the Tecator™ Digestion block and placed into the sampler for analysing each sample without any sample transfer. When all samples are completed the system performs a cleaning cycle before closing down automatically.

The PC software, Compass, provides complete traceability as all data can be transferred and stored in a PC or connected network. Compass also provides an easy and convenient sample registration and LIMS communication. The unit can of course be operated as stand alone without a PC.

For full information see Kjelttec 8400/8420/8460 Datasheet and Compass (PC software) Datasheet



Crude, Detergent and Dietary Fibre Analysis

The traditional methods for analysis of fibre involve repeated sample treatments, transfer, and filtration together with the handling of various, often hot, reagents. Each of these processes is a potential source of error or safety concern. The Fibertec™ systems reduce these errors and improve safety by containing the sample throughout the procedures, minimising the handling of reagents and ensuring fast, efficient filtration by use of integral vacuum & pressure systems. Systems for Crude and Detergent fibres associated with Animal Nutrition and for Dietary Fibre provide comprehensive solutions to suit every need.



Fibertec™ 2021/2023 Fibercap System – 6 or 18 place

Manual systems, with low investment cost, based on a unique capsule immersion principle for the determination of Crude and Detergent Fibre fractions (NDF, ADF & ADL) following the procedures of official bodies such as AOAC, ISO, AACC, AOCS and EC.

For full information see Fibertec 2021/2023 Datasheet



Fibertec™ M6 – 6 place manual system

For fibre determinations according to Weende, van Soest, etc. including boiling, using externally preheated reagents, rinsing and filtration under reproducible and controlled conditions, comprising:

Fibertec™ 1020 Hot Extraction Unit

6 place Hot Extractor, for hydrolysis and extraction with built-in systems for heating and filtration minimizing contact with reagents.

Fibertec™ 1021 Cold Extraction Unit

6 place Cold Extractor, for defatting, extraction at ambient temperature; e.g. lignin determination; and for dehydration of fibre residues.

For full information see Fibertec M6 Datasheet



Fibertec™ 2010 – 6 place automatic system

The Fibertec™ 2010 System is available with the following basic modules:

Fibertec™ 2010 Hot Extraction Unit – for hydrolysis and extraction, featuring automatic preheating and addition of reagents, boiling and filtration. The system fulfils the boiling start time requirements for crude fibre specified in ISO and EC standards and has automatic cooling water control.

Fibertec™ 1021 Cold Extraction Unit – for de-fatting, extraction at ambient temperatures; e.g. in lignin determination; and dehydration of fibre residues.

For full information see Fibertec 2010 Datasheet



Fibertec™ E

The Fibertec™ System E is designed for rapid and rational determination of Total, Soluble and Insoluble Dietary Fibre according to established enzymatic methods, including those approved by AOAC, AACC, NMKL and Asp. It is also useful in sample preparation for detailed studies of fibre fractions, e.g. by chromatographic or colorimetric techniques.

The system comprises 1023 Filtration Unit for rapid filtration of the various fractions during analysis, and 1024 Shaking Water Bath for the enzymatic digestion procedures. A separate Boiling Water Bath (not supplied) is required.

For full information see Fibertec E 1023 Datasheet

Flow Injection Analysis

The FIAstar™ 5000 is a fully automated system for the determination of Ammonium, Nitrate/Nitrite, Total Nitrogen, Phosphate, Total Phosphorus and other parameters, using latest ISO approved methods. Up to three parameters can be analysed simultaneously. Each Analyser Module comes with a built-in Digital Dual Wavelength detector to suppress refractive index and air bubble effects, thermostat, injection valve and pump. The entire system is controlled by the Windows® based FIAstar 5000 software SoFIA™, including calibration routines according to ISO 8466.

FIAstar™ System – Single Channel

A Basic system for the analysis of one parameter, with manual presentation of the sample. Additional chemistries can be run by exchanging the method cassette.

A PC is required to run the software and the system.

PC specifications:

PC with Windows® 98, 2000 or XP installed.

At least 32 MB RAM & 40 MB available space on hard disc drive
1,44 MB floppy or CD drive

One USB port for each connected FIA module

One RS 232 port for communication with 5027 Sampler

Additional RS 232 port for data transfer to LIMS

'Plug & Analyse' Method Cassettes

Pre-configured Method Cassettes are inserted and/or exchanged all in one grip and automatically connected/ disconnected. Starting up and closing down the system takes a matter of minutes. A Blank Method Cassette is available to configure non-standard applications.



FIAstar™ System – Three Channel with Sampler

A fully automatic system to analyse three parameters simultaneously in a single sample. Stand-by function extends life span of pump tubes and saves valuable reagents (<3 ml reagent/24 h) allowing fully unattended overnight operation.



Autosampler 5027

Sample trays:	For 64 or 120 samples
Turntable division:	4 individual racks
Sample size:	12, 30 ml
Side tray:	10 positions for standards and QC

SoFIA Software

Calibration points:	Up to 10 standards
Calibration curve fit:	Linear or second order ISO 8466
QC & GLP routines:	Check samples; multiple sample and standard runs; automatic recalibration; out of reagent, out of sample, and out of range warnings. Predefined methods library



For full information see FIAstar 5000 Datasheet

Disposables, Accessories & Spare Parts

We consider disposables, accessories and original spare parts as an integral part of our support to our customers. Everything is specially designed and manufactured to fit your systems and to ensure safe, accurate and simple laboratory work.



Kjeltabs

A wide selection of catalysts in convenient tablet form for use in acid digestion procedures.



Digestion & Distillation Tubes for Kjeltec™

Tubes for Kjeldahl and other analyses using Tecator™ Digestors and Kjeltec™ Systems. Available in 100, 250, 400 & 750 ml capacity.

Straight walled, volumetric and ball joint versions.



Cellulose Thimbles for Soxtec™

Pure cellulose in single and double thickness
Available in 26(30), 33(65) and 45(120) mm(ml) size
Ultra pure version for environmental applications.



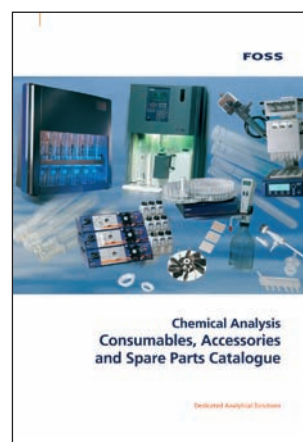
FiberCap™ for Fibertec™ 2021/2023

Single use capsule for safe, fast and simple analysis
Available in packs of 100 and 500.



Crucibles for Fibertec™

Glass crucibles in various porosities for use with Fibertec™ M6, 2010 & 1023.



Consumables, Accessories & Spare parts catalogue.

Components for your CA systems, including discontinued ones, listed by product group to make it easy to find exactly what you need.

For full information see Catalogue 99990800

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