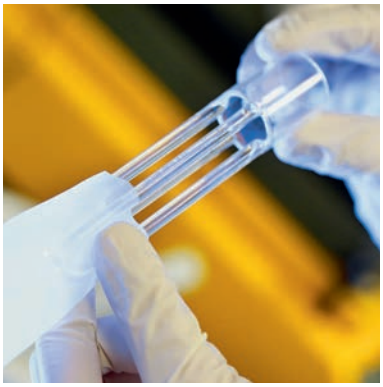
Gerhardt
Analytical Systems

FibreBag technology for determining the crude fibre, ADF, NDF and ADL content in feedstuffs

A NEW LEVEL OF FIBRE ANALYSIS



PRECISE

Consistent quality of analysis thanks to filtration tissue with defined pore width

ECONOMICAL

Major time savings, reduced use of chemicals

FLEXIBLE

Manual and automated systems for any need

EFFICIENT

Simultaneous processing of multiple samples in a small space

“FIBRETHERM standardises fibre analysis in feedstuffs, reaching a new level of quality, making it more economical, more precise and more reliable.”

FIBRETHERM

FIBRETHERM automates time-consuming, personnel-intensive digestion and filtration processes for determining various fibre fractions in feedstuffs. The analysis complies with the standard methods specified by Weender and van Soest. FIBRETHERM enables simultaneous processing of 12 samples. Compared to the standard manual method, this represents a major reduction in the energy and chemical consumption and the time taken. The device automatically controls and monitors all the boiling, washing and filtration processes within a self-contained system.

The FIBRETHERM method is based on the FibreBag technology developed by C. Gerhardt. This innovative filtration technology avoids common problems in the classic filtration method using frits and filter beds, it simplifies handling and digestion of the samples and ensures better and more reliable results.

Scan the QR code and watch our FIBRETHERM video.

FibreBag technology

EFFICIENT FILTRATION

In the FibreBag method, digestion and filtration are carried out in a generously dimensioned filter bag made of a high-precision special textile that standardises reproducible filtration conditions. The FibreBags are incinerated together with the sample residue at the end of each digestion process. This single use means that each analysis is always conducted under the same standardised filtration conditions, thereby generating precisely reproducible results.

FibreBag BENEFITS

- The large filtration surface makes digestion, washing out and filtration of the samples easier, while also allowing bigger sample weights.
- A glass spacer ensures that the samples in the digestion vessel are optimally wet and rinsed.
- The filter bags remain open and do not have to be sealed. This makes handling easier.
- The FibreBags are nitrogen-free and can be used to determine nitrogen in the fibre fractions.

“FIBRETHERM uses the innovative FibreBag technology to determine the crude fibre, ADF and NDF content of feedstuffs.”

FIBRETHERM

AUTOMATED FIBRE ANALYSIS

FIBRETHERM completely automates all boiling, washing and filtration processes. Detergents are automatically added and dosed by calibrated pumps. The system controls and regulates the energy feed and cooling water, ensuring an efficient use of resources. A high quality glass-ceramic heating surface reduces heating times and guarantees constant temperature conditions. The innovative FibreBag filtration concept optimises digestion of samples and speeds up the washing and filtration processes. Up to 9 different analysis methods can be freely configured.

APPLICATIONS

Crude fibre | ADF | ADF_{OM} | NDF | NDF_{OM} | $aNDF_{OM}$ |

CHARACTERISTICS

Glass-ceramic hotplate	✓
Sample capacity	12
Pneumatic lift	✓
Programmable acid addition	✓
Programmable alkali addition	✓
Programmable rinsing water	✓
Programmable detergent suction	✓
Automatic cooling water control	✓
Visual/acoustic fault warnings	✓
Automatic fault monitoring	✓
Drip tray	✓

“The FIRBRETHERM sample carousel can automatically process 12 samples at a time. This saves costs, time and space.”

STRONG ARGUMENTS

COST REDUCTION

- Reduced chemical and energy consumption thanks to simultaneous processing of 12 samples.
- The device’s small footprint frees up space in the lab.

TIME SAVING

- Reduced time per analysis thanks to complete automation of the highly time-consuming digestion and filtration processes.
- Reduced process times thanks to short heating times and quick filtration

HIGH QUALITY OF ANALYSIS

- Standardised and automated analysis conditions enable precise results that can be reproduced at any time.
- The high-precision textile and the large surface area of the FibreBags provide the ideal digestion and filtration conditions.
- The trouble-free, virtually ash-free incineration of the FibreBag means that you work with low blank values.

MAXIMUM SAFETY

- The process takes place in a self-contained cycle. No extractor is necessary.
- Users have no direct contact with chemicals; this improves work safety in the lab.
- High quality components and comprehensive safety functions ensure trouble-free operation and make it possible to run the device without monitoring it.
- The upper part of the digestion vessel is made of glass, making it possible to carry out a visual check of the process at any time. The lower part is made of stainless steel and ensures safe handling of the simmering digestion solution.

AMYLASE ADDITION

The NDF value can be determined after addition of α amylase during running operation without interrupting the process. An external dosing pump (accessory) automatically regulates the addition of heat-resistant amylase.

The time and quantity of the addition can be programmed in the firmware. FIBRETHERM can be retrofitted with the external dosing unit at any time.

FIBREBAG SYSTEMS FOR FIBRE ANALYSIS

“FIBRETHERM – sophisticated details and practical accessories make it easier to handle samples, improve results and increase safety in the lab.”

EASY HANDLING

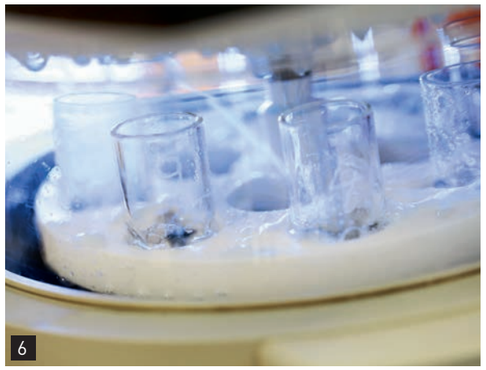
Easy handling: Insert FibreBag, weigh sample and you're ready. No need to seal the filter bag.

Convenient, time-saving degreasing with solvents in the degreasing module. 6 samples can be treated at the same time.

When the FibreBags are inserted into the sample carousel, they are automatically clamped firmly in place.

The removable handle makes it easier to insert and remove the sample carousel.

9 different methods can be freely configured and saved.



The rotating sample carousel ensures optimum bathing of the sample. The rotation is generated by the jet of detergent.

HEAT-RESISTANT INCINERATION MODULE

- No risk of burning during insertion into the muffle furnace
- Samples cannot topple over
- No weighing loss with wet samples (e.g. Canned food for pets): Liquid is collected in the ceramic crucible
- Reduced risk of mixing up samples because glass spacer and incineration crucible can be marked accordingly

The incinerating module with a long handle makes handling of samples easier.

MAXIMUM ANALYSIS QUALITY

FIBRETHERM can be used to determine all fibre fractions in feedstuffs. This includes the crude fibre content (XF), as well as the entire ADF and NDF determination process, including ADF_{OM} and $aNDF_{OM}$ values.

The device provides consistently reproducible results of excellent quality. This has been confirmed in comprehensive comparison tests with the official standard methods.

Each analysis takes place under standardised, precisely reproducible conditions. All the boiling, washing and filtration processes are completely automated and carried out precisely in accordance with the preset, programmed method. This rules out deviations in results due to manual action. All the relevant parameters are monitored and controlled automatically. Application data sheets for various extractions are available on request from: application@gerhardt.de

"FIBRETHERM operates in accordance with the standard Weende and van Soest methods used worldwide and provides maximum-precision results."

"Space-saving systems are available for manual analysis; the systems include 1 or 6 heaters for processing up to 36 samples."

Manual

FIBRE ANALYSIS

The benefits of the innovative FibreBag technology are also available for manual fibre analysis.

Our manual system makes it possible to simultaneously process up to 6 samples in the smallest of spaces. This frees up space in the lab and significantly reduces your chemical and energy costs.

The manual FibreBag system is particularly well suited to labs that handle low or seasonally fluctuating volumes of samples. It can be used for crude fibre determination or to determine the ADF, NDF and ADL fractions in feedstuffs.

TECHNICAL DATA

FIBRETHERM

Cooling water consumption	approx. 5 l/min
Rated voltage	230 VAC, 50 Hz *
Power consumption	1,900 W
Weight	42 kg
Dimensions (W x D x H)	340 x 640 x 860 mm
Compressed air supply	4–5 bar
Digestion vessel capacity	1.8 litres
Interfaces	2 x RS 485
Storable programs	9
Water connection	2 x ¾ inch thread
Compressor (optional)	4–5 bar

FIBREBAG – MANUAL SYSTEMS

Three systems are available for manual determination of the crude fibre content of feedstuffs; the systems have 1 or 6 heaters. Up to 6 samples can be processed simultaneously on each heater. All the boiling and filtration processes have to be completed manually in these models.

ORDER DATA

For detailed technical data and order information for the individual device types and for the accessories and consumables, please request our product data sheet.

* also available:
230 V, 60 Hz
115 V, 60 Hz

SERVICE AND MAINTENANCE

C. Gerhardt products are quality products for daily routine operation in the laboratory. We only use high quality materials with long service lives to provide you with maximum functionality and reliability. Laboratory equipment is exposed to high load. Acid fumes, heat, solvents and high sample throughput leave traces on every device. As a result, hoses, seals, pumps and glass parts have to be checked and cleaned at regular intervals and replaced, if necessary.

A maintenance and service agreement from C. Gerhardt maintains the serviceability and reliability of your FIBRETHERM equipment.

FIBRETHERM SCOPE OF MAINTENANCE

- General visual inspection and cleaning
- Replacing hose in peristaltic pump
- Cleaning and alignment of nozzles
- Alignment of the sample carousel
- Checking the lifting mechanism and safety switches
- Pump calibration
- Electrical check according to VDE 0701
- Documentation of the work performed
- Issue of a test sticker

OTHER SERVICES

- Repairs on-site or on the premises of C. Gerhardt
- Cost estimates
- Help by telephone or email
- Individual solutions for your equipment pool

QUALIFICATION IQ/OQ

It goes without saying that we also perform the IQ/OQ in accordance with our manufacturer specifications.

Our authorized C. Gerhardt Partner is happy to develop an individual maintenance and service contract with you for equipment from our company.

Presented by:

C. Gerhardt – Quality made in Germany

AUTOMATING STANDARD ANALYSES

Completely automated laboratory analysis systems from C. Gerhardt are highly developed special equipment. They automate recurring analysis processes in accordance with national and international standards and norms. They continuously provide precise and reproducible analysis results quickly, at low cost, economically and highly efficiently.

An excerpt from our product portfolio

COMPLETELY AUTOMATIC HYDROLYSIS

HYDROTHERM – automatic acid hydrolysis system for fat determination according to Weibull-Stoldt. When combined with SOXTHERM, HYDROTHERM is an ideal system solution for total fat determination.

COMPLETELY AUTOMATIC FAT EXTRACTION

SOXTHERM – automatic fast extraction system for fat determination

COMPLETELY AUTOMATIC WATER STEAM DISTILLATION

VAPODEST – fast distillation system for Kjeldahl nitrogen/ protein determination and steam distillation as sample preparation for further analysis.

COMPLETELY AUTOMATIC NITROGEN ANALYSIS

N-Realyzer – nitrogen/protein determination of solid and liquid samples according to the Dumas combustion method. A cost-efficient, fast and convenient alternative to the classic Kjeldahl method for almost all sample matrices.

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Gerhardt
Analytical Systems

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