analytikjena

High Performance TOC Analyzer!

Systems from Analytik Jena – the pacesetter in analytical technology

Modern techniques for sum parameter and elemental analysis are increasingly applied in environmental monitoring, as well as in process and quality control. The challenge facing modern analytical systems lies in reliable automation for different measuring cycles for an extensive range of samples. Analytik Jena AG is the leader in the development of reliable sum parameter and elemental analysis systems designed to satisfy the diverse modern demands posed in today's age.

With this aim in mind, Analytik Jena developed a flexible future-oriented system series: the multi N/C® series. Automation and reliability are combined in unmatched quality thanks to patented innovative solutions. A system has been created to cope with the most diverse sample matrices. On the basis of the experience gained in this field over decades, Analytik Jena AG has developed into a worldwide leading provider. You profit from this extensive experience with the multi N/C® series. The long tradition of analytical instrument manufacture in the Ilmenau region dates back to the early 19th century. Analytik Jena has continued this tradition since 1990 and produces high performance analytical instruments for TOC, AOX and elemental analysis.

1945 Manufacture of the first instruments, repressing the start of today's titration technique and elemental analysis

1952 Electrolytic unit for coulometric measurement mass analysis

1982 Launch of the first nitrogen and chloride titrator

1991 First simultaneous elemental analyzer and special TOC/TN_b and AOC/TOX multi X® – first AOX/TOX analyzer with automatic sampler

1994 multi N/C® – first simultaneous TOC/TN_b anlayzer worldwide

2002 Double Furnace – first innovative concept for combustion analysis of the most diverse matrices

2004 multi N/C®– introduction of the new TOC/TN_b analyzers with Self Check System (SCS)

2010 The new multi N/C® series – with Focus Radiation NDIR-Detector®


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multi N/C
3100
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multi N/C® – experience the innovation!

multi N/C® – High Performance TOC Analyzer!

TOC analyzers no longer surprise you? We think they can! If you get to know the new multi N/C® series you'll know why.

We have been constructing TOC analyzers since 20 years. Much has changed from the beginning until now!

The new multi N/C® series sets standards!
The parameters **TOC, NPOC, POC, TC, TIC** and **TN_b** can be measured quickly, easily and without any conversion. Working with multi N/C® series analyzers guarantees compliance with the valid national and international standards, such as: ISO, EN, DIN, EPA, ASTM, USP, FDA and pharmacopoeias.

▲ *With multi N/C® always on the right course!*

Looking for the best system for your routine or special applications?

Look no further – the multi N/C® series offers the optimum solution for every application. From the analysis of drinking water and waste water, pharmaceutically used water or cleaning validation, surface water, through to water in power plants or in the semiconductor industry. For solid substance analysis, e.g., **TOC determination** in sewage sludge or soils, extra modules are available.

For **TN_b determination**, two highly sensitive detectors are available. The chemiluminescence detector (CLD) or the solid state chemodetector (ChD) can be used for the complete and reliable measurement of all organic and inorganic nitrogen compounds.

multi N/C® is versatile, reliable and easy to use. The intelligent series offers intuitive user guidance and has been designed for tough routine analytical work! High-quality materials and long-living components ensure low wearing. The few number of consumables are arranged in the system for easy access. Few wearing parts, long maintenance intervals and fast replacement guarantee minimum operating costs.

Modular variety permits individual adaptation to your applications. Depending on your requirements we offer a wide range of different analyzers:

multi N/C® 2100
Compact and universal for environmental analysis

multi N/C® 3100
The all-rounder for almost all TOC applications

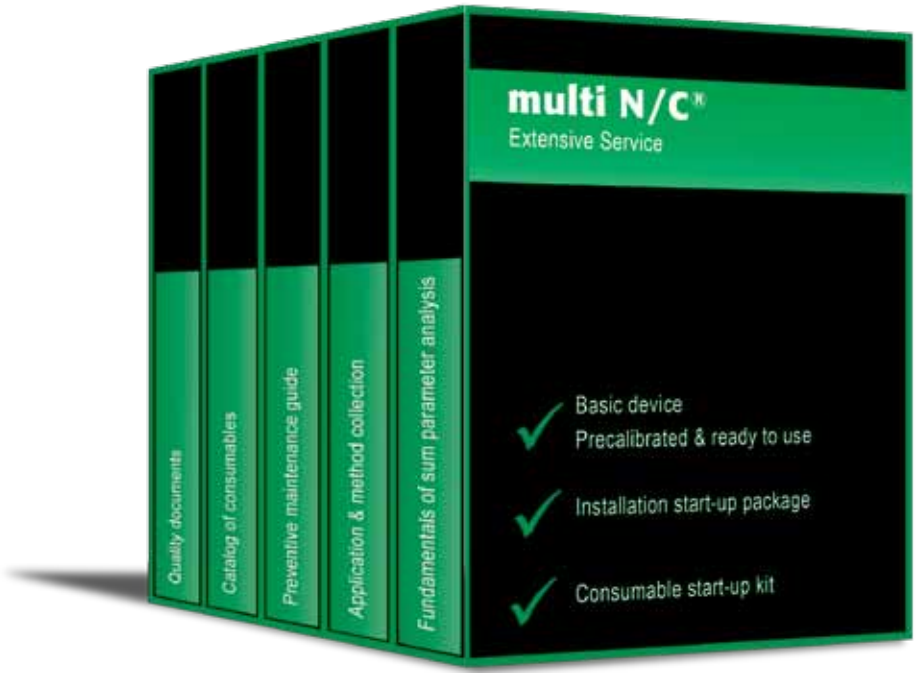
multi N/C® UV HS
Extremely well proven even in complicated matrices

multi N/C® pharma
Predestined for pharmaceutical applications

We deliver more than „just“ the analyzer.

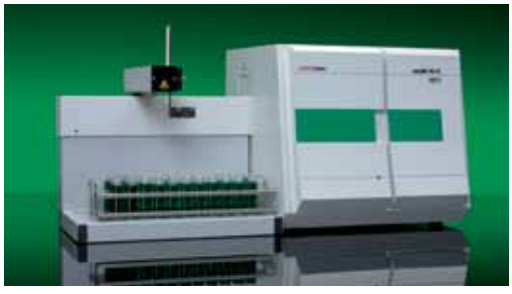
Simply unpack, connect and start measuring. Each model of the new multi N/C® series is pre-calibrated at the factory, making it immediately ready for use.

Along with the device operating manual you will receive our „Start-up Package“ containing additional materials and documents.
Do you have any general questions on TOC/TN_b determination?
In the „Fundamentals of Sum Parameter Analysis” you can find the right answers.
Need specific tips on sample preparation?
Our wide range of methods and access to our comprehensive application library provide helpful support.
The „Preventive Maintenance Guidelines“ provide important advices regarding the daily handling and care of the analyzer. A „Consumable Start-up Kit“ is included as standard in the delivery of the device. The illustrated list of consumables makes future selection easier.
Quality documents, such as the final inspection certificate and the acceptance certificate, are automatically included in the delivery.

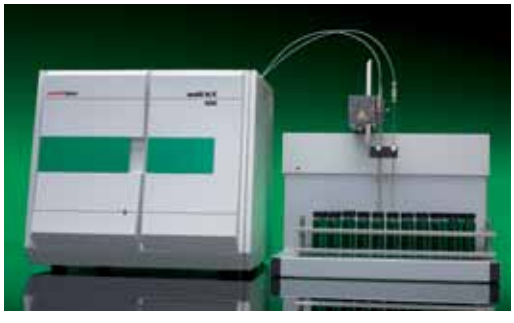


multi N/C® – unique

▲ *multi N/C® 2100* *multi N/C® 3100* ▼



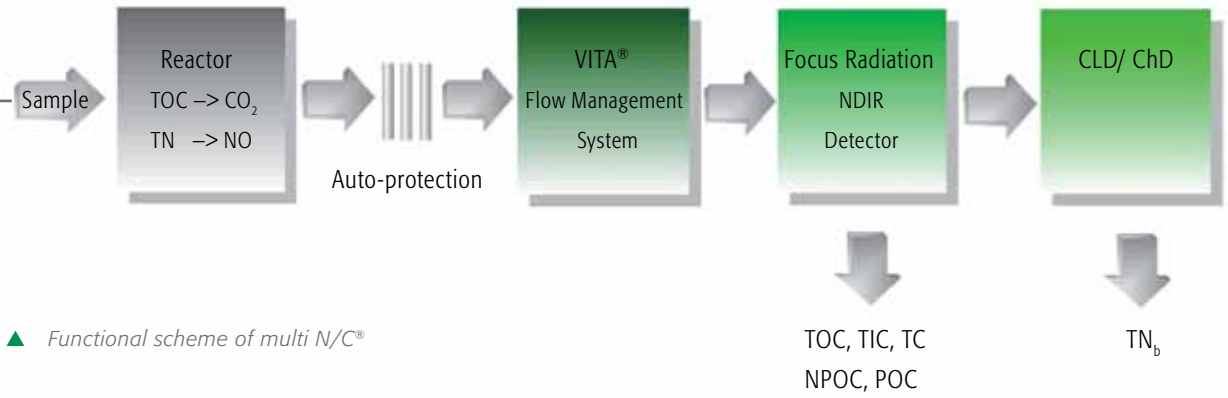
▲ *multi N/C® UV HS* *multi N/C® pharma* ▼



Highlights of multi N/C® series:

- Wide measurement range – also without sample dilution: precise detection due to high-quality Focus Radiation NDIR-Detector (FR NDIR-Detector) for TOC, the chemiluminescence-detector (CLD) or the solid state chemodetector (ChD) for TN_b
- VITA® Flow Management System: for stable device performance and highly reproducible analysis results
- Easy Cal: easy calibration with just one standard for the most different applications, including long-term stability
- Auto-protection: effective measuring gas cleaning and monitoring protect valuable system components

- Reliable oxidation: high-temperature combustion (up to 950°C) or High Power UV reactor
- Variable injection techniques: valve-free direct injection or flow injection
- Variable injection volumes
- TC, TOC, TIC, NPOC and NPOC plus, POC, TN_b: varied parameter determination
- Suitable for simultaneous TN_b determination
- Solid analysis at the highest level: double furnace technology – the ideal combination for water and solid samples without the need of an additional furnace
- Self Check System (SCS): for maximum operating and analytical safety
- Automation and modular design: variety of analyzers and accessories tailored to your application



▲ *Functional scheme of multi N/C®*

Focus Radiation NDIR-Detector

As a market leader in the field of optical spectroscopy we are able to guarantee that all our TOC analyzers are characterized by innovation, highest quality, and durable optical components with a long service life.

The use of the latest detector technology is a matter of course for us. The core element of the multi N/C® series models is the new Focus Radiation NDIR-Detector equipped with high-quality optics. In combination with a pulsed, high-power IR radiation source, the FR NDIR-Detector is unbeatable!

Focused energy

Energy-rich radiation is focused onto the microdetector with the help of integrated optics. The radiation density obtained in this way surpasses classical detectors many times over. The energy efficiency is almost 100 %. There are no losses, as is the case with corrosion-prone reflection detectors. This results in higher sensitivity and precision over a wider measurement range.

Resistant materials

The Focus Radiation NDIR-Detector is made of completely corrosion-free materials. Furthermore, the radiation source and the detector are encapsulated for optimal protection.

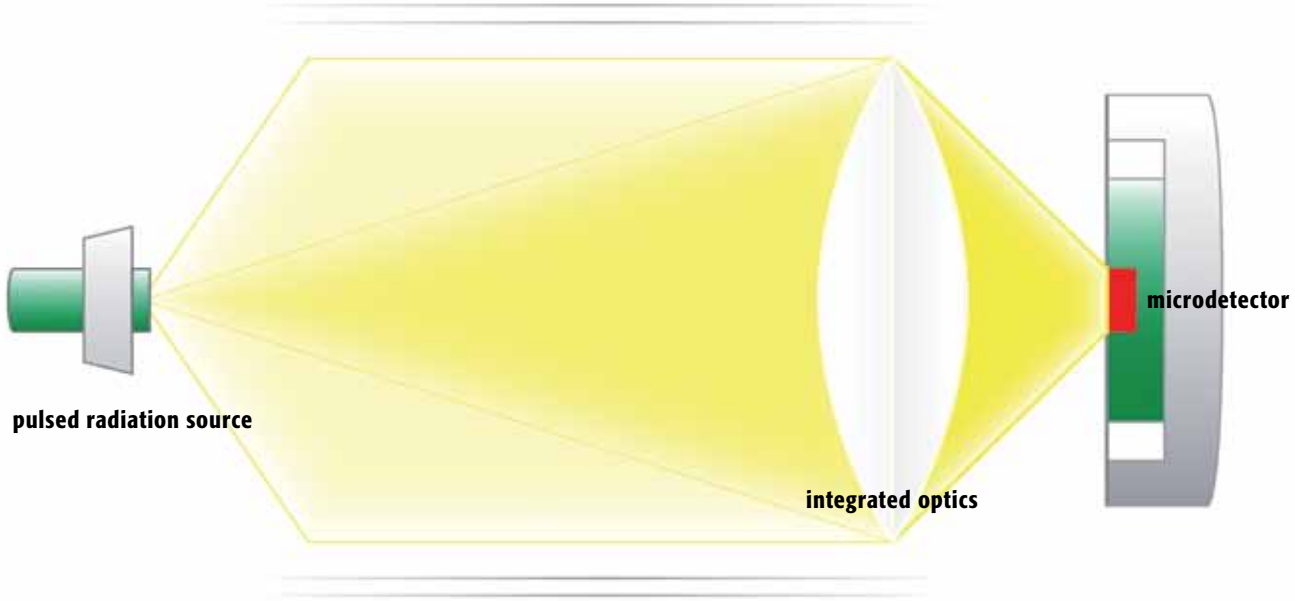
This ensures that the detector operation is more stable, even when working with aggressive samples. No time-consuming detector maintenance is necessary and a longer service life is achieved.

Latest technology

The Focus Radiation NDIR-Detector eliminates the use of classical, mechanical movable components which are prone to failure. Instead, the detector is equipped with an electronically pulsed radiation source and an optimized microdetector which guarantee significantly higher stability. As a result, maintenance and operating costs are reduced considerably!

Advantages at a glance:

- Maximum energy efficiency
- No energy losses
- No corrosion
- No mechanical parts
- Low susceptibility to faults
- Low operating costs
- Longer life-span
- Guaranteed precise measurement results



VITA® Flow Management System

VITA® Flow Management System continues to work where classical TOC analyzers reach their limits:

In the detection and consideration of gas flow fluctuations which are unavoidable due to evaporation and oxidation processes within the system. The measurement curve obtained with the help of VITA® is flow-independent, making the TOC system much more precise, sensitive and stable.

The VITA® Flow Management System not only guarantees highest operating safety but also reliable analysis results. An integrated high-performance gas box ensures stable gas flows by means of electronic control and adjustment of system gas flows several times a second. The test for leak-tightness is performed continuously and is fully automated. The results are transmitted to the Self Check System (SCS). If there are deviations from the preset control values the operator is automatically informed by a warning message. At the same time, all active device functions are locked in order to prevent incorrect analyses.

Which advantages does VITA® offer to you?

Improved precision & sensitivity

VITA® also enables the quick injection of large sample volumes in high-temperature TOC devices. Any unavoidable carrier gas fluctuations are compensated effectively. This significantly improves both the precision of measurement results and sensitivity in the trace area.

Easy Cal – easy calibration with long-term stability

Calibrations with VITA® can be made on the basis of a single standard using different injection volumes. Thereby carrier gas fluctuations of different sizes are automatically considered. This technique is ideally suited for the multipoint calibration of large operating ranges and also in particular for calibration in the trace range. The obtained calibration curves are flow-independent: the calibration remains stable!

Improved stability

Changed conditions within the analytical system, such as salt deposits, can have a negative effect on the carrier gas flow and thus on the NDIR signal. VITA® works effectively against this process and also improves the stability of measurement results after prolonged reactor use, particularly in the case of difficult samples. The long lifetime of the catalyst with consistently reliable results is guaranteed with the VITA® Flow Management System.

Advantages at a glance:

- Quick injection of large sample volumes
- Compensation of carrier gas fluctuations
- Permanent leak test
- Maximum operating safety thanks to integrated control system
- Improved precision and sensitivity
- Exact and highly reproducible analysis results
- Minimum calibration effort
- Long-term stability of the system and the calibration
- Limited maintenance costs

reliable & variabel

Reliable sample digestion

Correct measurement results require complete digestion of the most different organic and inorganic carbon and nitrogen compounds to CO_2 or NO. There are two optional efficient digestion methods available for each application: high-temperature oxidation and UV-supported wet chemical digestion.

High-temperature combustion (950°C)

High combustion temperatures up to 950°C provide sufficient energy which is necessary for breaking stable C-C multiple bonds as well as C-O or C-N bonds.
In combination with the use of effective catalysts, the digestion of the most stable compounds can be achieved quickly and reliably.

High Power UV reactor

Wet chemical TOC analyzers oxidize the dissolved organic compounds of a water sample through the combination of an oxidizing agent and an UV radiation source. The multi N/C® series uses a High Power UV reactor for this purpose. By using the particularly energy-rich UV radiation with two wavelengths of 254 nm and 185 nm, the sample matrix is oxidized completely.

Variable injection techniques

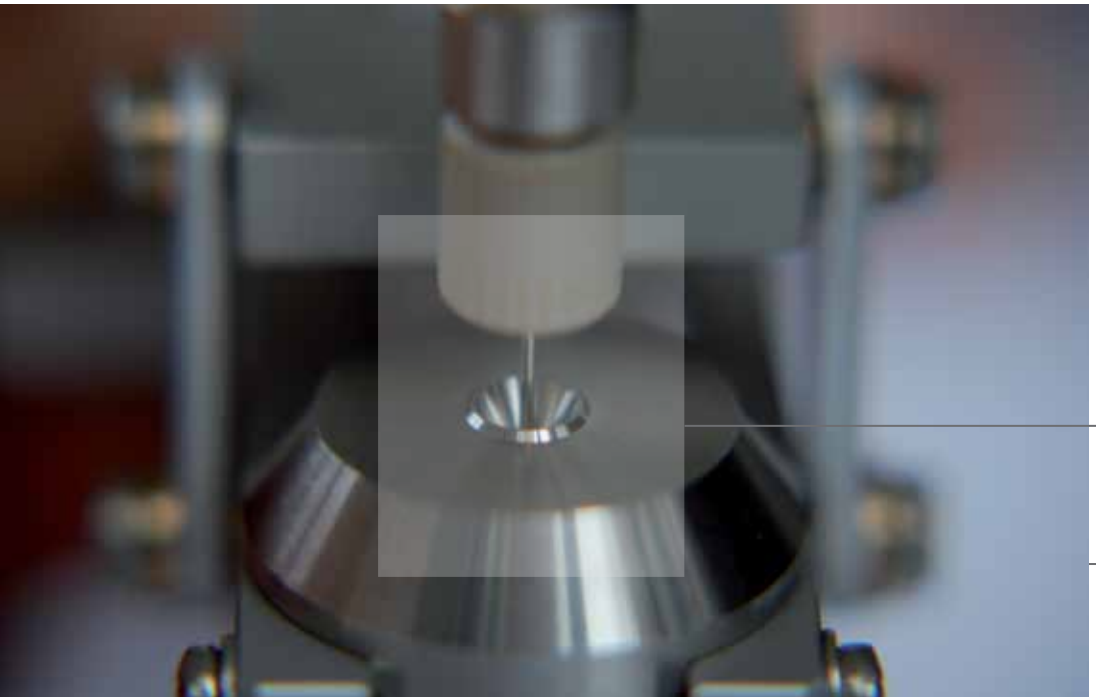
You have the choice – the multi N/C® series makes both options available, the direct injection as well as the flow injection.

Direct injection

With the direct injection technique, the sample reaches the furnace by the direct path! Particles? No problem!
Short paths minimize the rinse times before the next sample can be dosed in the reactor.
Direct injection is also ideal when only small sample volumes are available for analysis.

Flow injection

Flow injection is the preferred choice when frequently working with variable sample volumes (ranging from a few microliters up to several milliliters). Thanks to the high-precision dosing unit, the exact dosage of different volumes is not a problem! An intelligent rinsing technique ensures the effective cleaning of the injection system.
High sample throughput is also achieved thanks to the principle of „parallel purging and analyzing“.



◀ *Direct injection:*
Acidifying, purging, injecting

versatile & straightforward

Versatility: TC, TOC, TIC, NPOC, NPOC plus, POC or TN_b?

All methods at the click of a mouse!

TOC (TOC = TC - TIC) determination

Total carbon (TC) and inorganic carbon (TIC) are determined separately. The difference results in the TOC. With this method you can determine both volatile and non-volatile compounds. It is used in particular for the TOC determination of samples with a high TOC content and a low TIC content, e.g. in waste water.

NPOC determination

The TIC is removed from the sample. For this purpose, the sample is automatically acidified and the generated CO_2 is subsequently purged. The TOC is determined immediately afterwards. The method is particularly suitable when the sample has a high TIC content, e.g. in hard drinking water.

For particularly high sample throughput it is recommended to use our **NPOC plus mode**. Thanks to the clever combination with the difference method time savings up to 50% can be achieved. The verification of the complete TIC elimination in the NPOC mode is ensured by the automatic TIC control function.

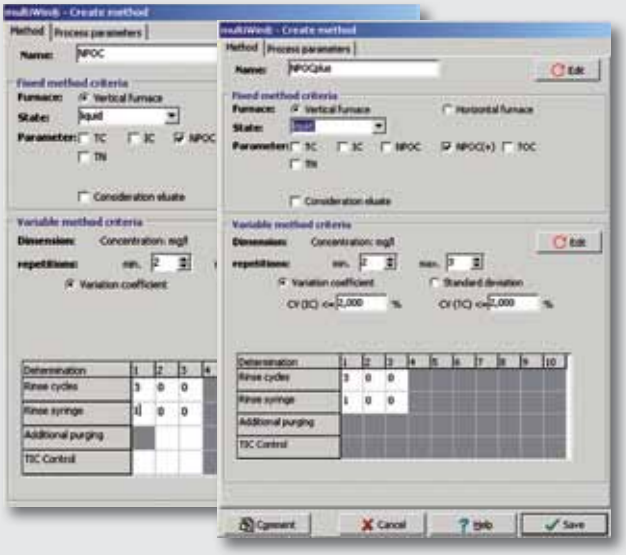
POC determination

If only the volatile components of a water sample are of interest, the POC method quickly provides the desired information that is easy to understand.

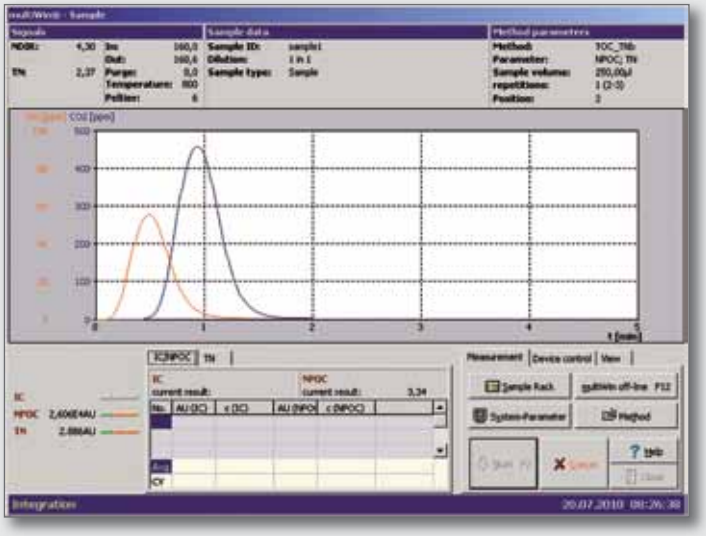
TN_b determination

The TN_b determination is used to detect all organic and inorganic nitrogen compounds. With a single injection and using the same catalyst, TOC and TN_b are measured simultaneously. Small sample volumes are sufficient for measurement. This saves time and operating costs.

In addition, sample digestion up to 950°C guarantees the complete processing of nitrogen compounds. Two detectors are available for determining nitrogen. The formed NO is determined quantitatively and reliably with the highly sensitive CLD. Alternatively, a solid state chemodetector (ChD) can be used as a cost-effective variant.



▲ *Parameter selection by mouse click: Example NPOC plus mode*



▲ *multiWin® software measurement window: Simultaneous TOC/TN_b determination*

simple & efficient

Easy Cal – calibration has never been so easy!

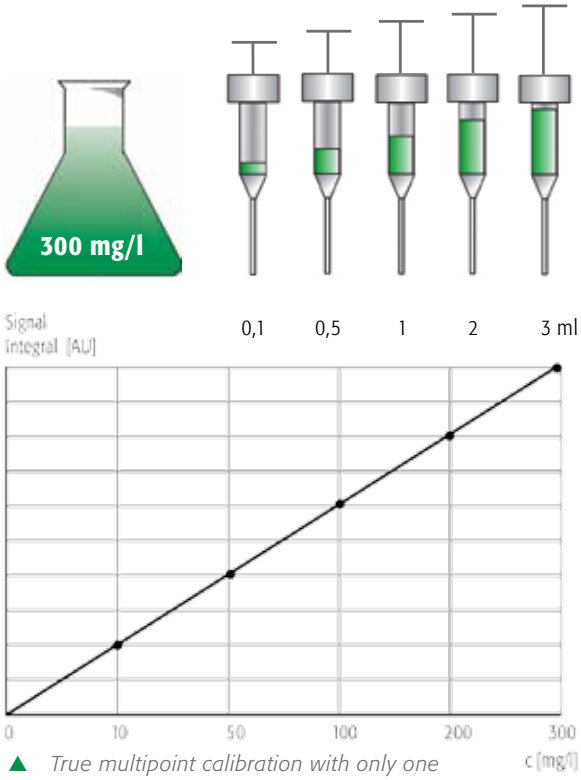
Correct measurement results also depend on the correct calibration!

Volume-dependent calibrations

Thanks to the VITA® Gas Flow Management System, it is possible to obtain precise results even when injecting different volumes. This is the prerequisite for a true multipoint calibration over a larger operation range with the help of only one standard solution. All you need to do is to prepare a suitable standard solution – Easy Cal will do the rest.

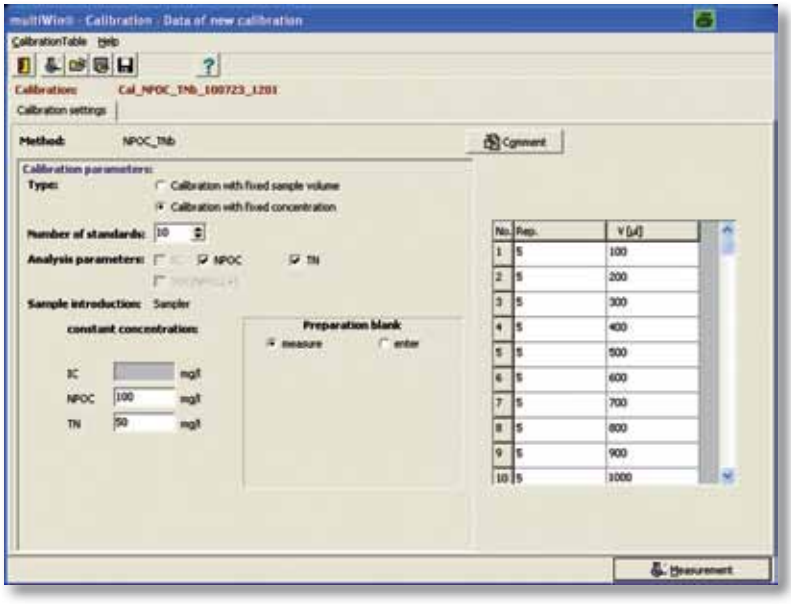
Classical calibrations

When it comes to „classical" calibration using standard solutions of different concentrations, Easy Cal also leaves nothing to be desired. You can freely choose the measurement range, the number of the calibration points and the number of repeated measurements per data point.



▲ *True multipoint calibration with only one standard solution*

▼ *Setting the calibration parameters in the multiWin® software*



Calibrations in the trace range

Standards with low concentrations of TOC are less stable. In addition, the TOC blank value of the used water makes it more difficult to prepare low-concentration standard solutions. With Easy Cal this is not a problem: a standard solution with higher concentration is the basis for your calibration. Small injection volumes ensure the necessary sensitivity of the calibration curve. A blank value correction of the used water goes without saying.

Automatic selection of the calibration curve

Thanks to Easy Cal, several calibration curves can be linked to a single measurement method: Easy Cal automatically and reliably selects the optimal calibration curve for your sample measurements. It's that easy!

Easy Cal guarantees perfect measurement results over a long period of time!

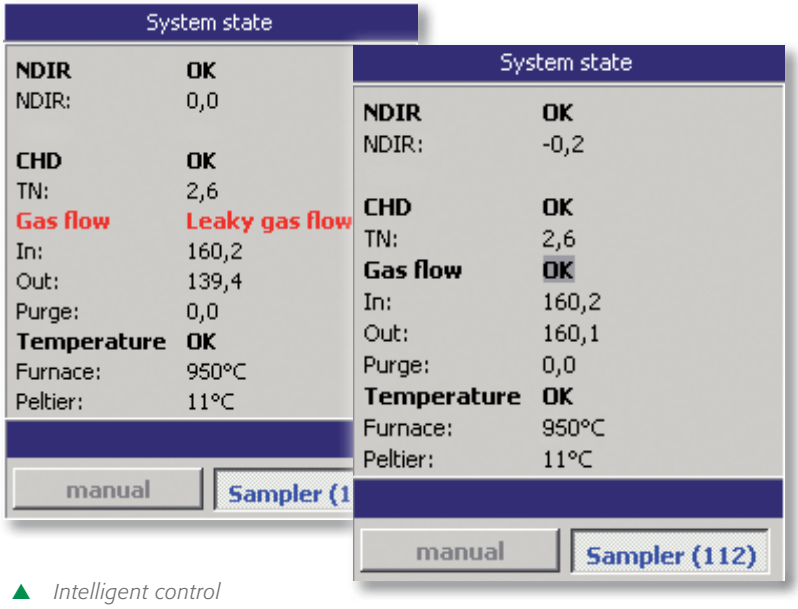
precise & safe

Precise and safe measurements with the Self Check System (SCS)!

The fully integrated Self Check System controls all the parameters which are important for device safety and the quality of the analysis. As an intelligent combination of hardware components and software functions, it automatically ensures the trouble-free operation of the entire analytical system. Important parameters, such as gas flows, temperatures, pressures, system tightness, detector status, baseline stability, etc., are constantly checked for you.

The result: convincing performance and perfect measurement results.

It goes without saying that SCS belongs to the standard configuration of the multi N/C® series.



▲ *Intelligent control of the system tightness thanks to SCS*

Advantages at a glance:

- Maximum operating safety with minimal operating costs
- Ideally suited for 24-hour operation
- Independent monitoring of maintenance intervals
- No interruptions caused by gas flow fluctuations or gas shortage
- No false low readings caused by gas leaks
- No dispersed measured values due to flow fluctuations
- Automatic system shutdown in the case of an error
- Easy-to-use system
- Low operating costs

Auto-protection

Effective measuring gas drying and cleaning as well as monitoring guarantee the failure-free operation of the high-value system components. The drying of the measuring gas is performed completely without the use of chemical drying agents. Additional aerosol and water traps effectively prevent the penetration of residual humidity into the system. Halogen traps effectively free the measuring gas of corrosive components. An integrated pressure-monitoring guarantees that the system is automatically shutdown in case of failure. A low wear level and efficient operation are also ensured when working with difficult matrices and high salt loads. Auto-protection makes your system safe and robust!

flexible & fast

▲ *Autosampler for 116 samples – fully automatic & easy to use*

High sample throughput

A wide range of autosamplers is available for the automation of your TOC analyzer. You can determine the automation level yourself and thus the sample throughput in your lab. Also users with small amount of samples do not need to work manually: the small, inexpensive autosamplers facilitate work enormously.

For high-throughput labs, autosamplers with a high capacity of up to 116 samples are available. The integrated sample homogenization (stirring), the automatic acidification and blow out features turn your autosampler into an all-rounder for sample preparation and feeding. In addition, time-optimized processes, such as parallel analyzing and purge out, increase the sample throughput.

▼ *Autosampler APG 21*

▼ *Autosampler APG 64/ 116*

▼ *Autosampler APG 10*

▼ *Autosampler APG 64/ EPA*

▼ *Autosampler APG 18/ 49*

▼ *Autosampler APG 60/ 112*

modular & powerful

Solid analysis at the highest level

With the separate solids module HT 1300, solid samples can be digested at up to 1300°C. With the help of additional substances, even higher temperatures up to 1800°C are possible. The introduction of the sample in ceramic boats is child's play. By applying the high-temperature combustion (HTC) technology with the use of resistant ceramic, particularly long combustion tube service lives can be achieved. The maximum sample weight up to 3 g guarantees representative TOC measurement results, even in samples with a low level of homogenization.

The globally unique double furnace technology also enables the fast switch-over between liquid and solid operation. A single furnace permits both TOC determination in water samples in a vertically arranged combustion tube and TC/TOC determination in solids in a horizontally positioned combustion tube. The double furnace technology is above all a compact, space-saving alternative for solid analysis.

▲ *HT 1300 – solid sample feeding*

You would like to use the suspension method for your solid samples? multi N/C® systems are also ideally suited for this purpose!

▼ *Double furnace technology – sample feeding for determining the TOC in solids*

The compact power pack!

The multi N/C® 2100 is the space-saving TOC/TN_b analyzer which demonstrates its strength particularly in the field of environmental analysis.
Along with VITA®, the FR NDIR-Detector and catalytic high-temperature combustion up to 950°C, multi N/C® 2100 is equipped with a perfect injection technique for particle-containing samples.
The integrated autosampler and the solid technique turn it into a compact routine analyzer.

Characteristics multi N/C® 2100:

- Focus Radiation NDIR-Detector
- VITA® Flow Management System*
- Easy Cal*
- Auto-protection

- Catalytic high-temperature oxidation up to 950°C
- Valve-free direct-injection technology
- Suitable also for small injection volumes
- Upgradable for simultaneous TN_b determination
- A catalyst for simultaneous TOC/TN_b determination in the entire measurement range
- Option of HT 1300 or double furnace technology for solid analysis
- Compact system with integrated, fully automated auto-sampler

* model-specific

Versatility at the highest level!

No matter whether ultra-pure water or waste water, multi N/C® 3100 is suitable for all samples. This is made possible by the combination of catalytic high-temperature combustion, VITA®, the Focus Radiation NDIR-Detector, as well as flow injection with intelligent rinsing technology for particle-containing samples.
In addition, multi N/C® 3100 is particularly fast and thus permits high sample throughputs.

Characteristics multi N/C® 3100:

- Focus Radiation NDIR-Detector
- VITA® Flow Management System
- Easy Cal
- Auto-protection

- Catalytic high-temperature oxidation up to 950°C
- Flow injection with intelligent rinsing technology for particle-containing samples
- Suitable for variable injection volumes
- High sensitivity down to the lowest ppb range
- Can be equipped for simultaneous TN_b determination
- A single catalyst for simultaneous TOC/TN_b determination in the entire measurement range
- High-temperature combustion (HTC) technology: HT 1300
- High sample throughput by parallel purging and analyzing
- Optionally available with autosamplers of different capacity

TOC-determination made easy!

The maintenance requirements of wet chemical TOC analyzers are very low. The multi N/C® UV HS is a system which works both with an oxidation agent (peroxodisulfate) and a highly effective UV radiation source for sample oxidation. At the same time the system is highly sensitive and suitable – along with ultra-pure water samples – also for drinking water or special samples, such as acids, electrolysis baths and other aggressive matrices.

Unlike classical TOC analyzers with an UV reactor, multi N/C® UV HS uses two wavelengths instead of just one: 254 nm and 185 nm. The hard radiation obtained in this way guarantees a complete oxidation of even the most stable carbon compounds. The effective blank value reduction by means of automated purging of the reagents ensures minimal system blank values. For ultra-pure water analyses, a decisive advantage can be to work only with UV radiation, without oxidation agents, because the blank value of the oxidation agent can cause interference in the trace analysis. This is not a problem with multi N/C® UV HS! A suitable method can be selected in the user interface, so that the High Power UV reactor delivers the necessary energy for complete oxidation.

Characteristics multi N/C® UV HS:

- Focus Radiation NDIR-Detector
- VITA® Flow Management System
- Easy Cal
- Auto-protection

- Wet chemical oxidation with a High Power UV reactor
- Flow injection
- High-precision dosing unit for variable, in particular very high injection volumes
- Maximum sensitivity and precision in the ppb area
- Effective blank value reduction
- TOC determination also in aggressive matrices
- High-temperature combustion (HTC) technology: HT 1300
- High sample throughput by parallel purging and analyzing
- Optionally available with autosamplers of different capacity

Designed for the pharmaceutical industry!

Pharmaceutical applications require special technological solutions: highest sensitivity and precision as well as adaptation to the requirements of the pharmaceutical industry.

multi N/C® pharma has been designed especially for pharmaceutical applications. Two models are available: **multi N/C® pharma HT** and **multi N/C® pharma UV**.

Depending on the application, two digestion principles are available: catalytic high-temperature combustion up to 950°C (multi N/C® pharma HT) or wet chemical oxidation in a High Power UV reactor (multi N/C® pharma UV).

At the same time, the focus is on the precision and correctness of the measurement results in the lower measurement range. This is possible thanks to the VITA® Flow Management System and by high sample injection volumes with the help of a high-precision injection syringe. And also by the use of a volume-specific calibration method which can be used to perform reliable calibration down to the lower ppb range. Minimal system blank values are obtained through the automatic purging of the used chemicals. In addition, a blank value free digestion without reagents is available.

multi N/C® pharma is thus uniquely suitable for ultra-pure water analyses, in particular for the analysis of WFI (water for injection purposes), AP (purified water), liquid or solid samples (swabs) from the cleaning validation and other typical applications in the pharmaceutical labs.

The Self Check System (SCS) provides valuable services in a pharmaceutical lab

All important device parameters are continuously checked and any deviations are recorded in the audit trail. The System Suitability Test (SST), which is necessary in the FDA, is an integrated function of the multiWin® software and can be performed completely automatically by pressing a button.

Source: Wacker Chemie AG

Designed for the pharmaceutical industry!

System Suitability Test (SST)

Saccharose and p-benzoquinone are both provided at a concentration of 500 µg/l and measured. Certified ready-to-use solutions are available for this purpose. The user interface offers an integrated SST function which can be executed intuitively by the user and the obtained result is then saved in the audit trail.

Highest levels of precision and correctness in the ppb range

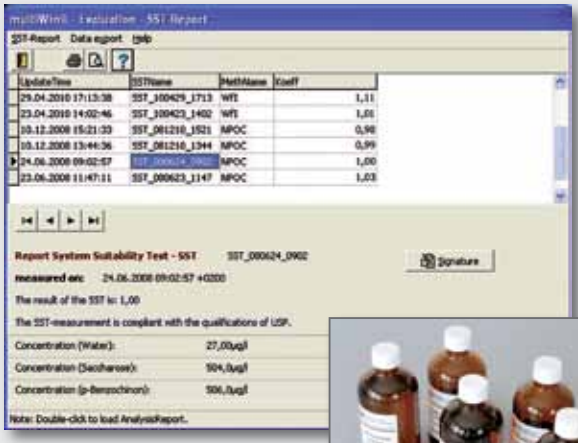
This is achieved by means of the highly sensitive Focus Radiation NDIR-Detector, VITA® and the unique volume-specific calibration method. This method can be used for calibration down to the lower ppb range by injection of different volumes using just a single standard. This means that the trace range, in which it is particularly difficult to prepare stable calibration standards, can be reliably calibrated for the first time.

FDA 21 CFR part 11

The user interface of the multiWin® software fully complies with FDA requirements. It is equipped with different levels so that several users can be granted different access rights. Individual passwords guarantee that no unauthorized persons can access the system. All important events, such as logon/ logout, measurements, calibrations, as well as the messages generated by the Self Check System (SCS), are recorded in the audit trail.

All relevant informations are always protected, for example, also the used method settings and the used calibration which have been used for calculating the respective measurement results.

At the end, the generated measurement data is signed off electronically by the operator as well as by the lab supervisor.



▲ *Clear presentation of the measurement results in the SST report*

▲ *Certified ready-to-use solutions*

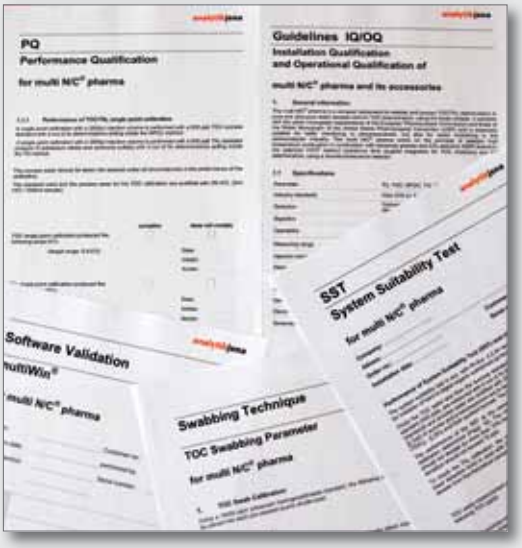
▲ *multiWin® permits the granting of individual access rights*

Cleaning validation

Cleaning validation can be performed, either according to the final rinse principle (by measuring the last reactor rinse water) or according to the swab test principle (wiping out the reactor with „swabs“). The swabs are either eluted – the eluate sample is measured as a liquid sample – or directly combusted using a swab test module.

IQ, OQ, PQ and SST – a completely reliable package!

multi N/C® pharma provides detailed IQ, OQ and PQ documents that have been especially optimized for the pharmaceutical industry. The device performs a strict mandatory test program during installation. After the device test has been completed, you will receive the software validation certificate, the detailed SST report and much more.



Designed for the pharmaceutical industry!

▲ *multi N/C® pharma HT*

▲ *multi N/C® pharma UV*

Characteristics multi N/C® pharma:

- Focus Radiation NDIR-Detector
- VITA® Flow Management System
- Easy Cal
- Auto-protection

- Available either for catalytic high-temperature oxidation up to 950°C (multi N/C® pharma HT) or wet chemical oxidation with High Power UV reactor (multi N/C® pharma UV)
- Flow injection
- High-precision dosing unit for variable, in particular very high injection volumes
- Maximum sensitivity and precision in the ppb range
- Effective blank value reduction – excellent for applications in the trace range
- Unique volume-specific calibration down to the lowest measurement range
- Swab test module* for applications in the cleaning validation
- Integrated SST function
- Detailed, pharmaceutical industry-specific documents (IQ/OQ/PQ etc.)
- Can be equipped for simultaneous TN_b determination*
- One catalyst for simultaneous TOC/TN_b determination
- Available either for HT 1300 or double furnace technology for solid analysis*
- High sample throughput by means of parallel purging and analyzing
- Optionally available with autosamplers of different capacity

* model-specific

Self-explanatory, multilingual and versatile!

Using a high-performance analyzer has never been so easy. The multi N/C® series was designed to ensure user-friendly concepts and effortless operation.

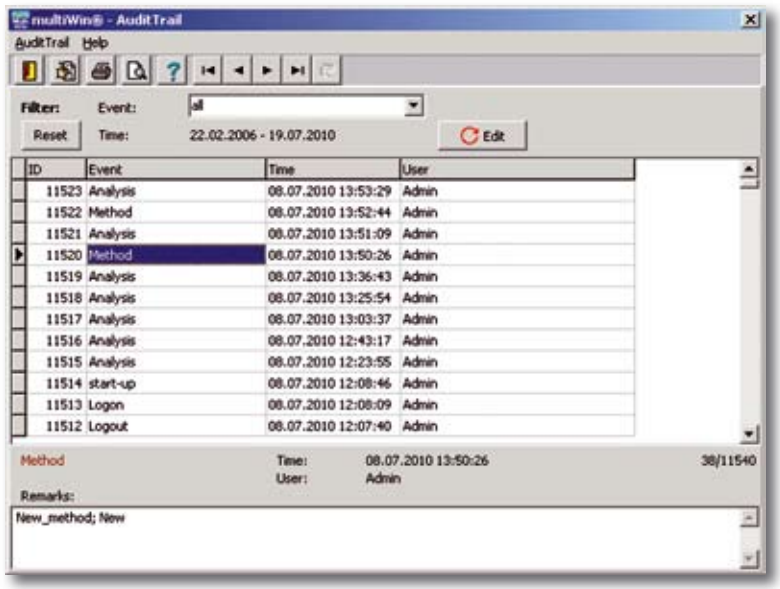
Intuitive operation and numerous helpful functions are available to support you at all times. Intelligent detailed solutions simplify and accelerate system maintenance and care. Special knowledge is no longer necessary. In this way, the systems of the multi N/C® series are not only specialists, but also all-rounders in daily practice.

Intuitive user operation

Either an external computer or, if desired, a high-resolution touch screen, are used for operation. The mulitWin® software features the typical standard methods for routine analyses. The intuitive software accompanies you through all the relevant menu items from system startup to shutdown of the analytical system. In this way, even personnel without special knowledge are able to perform their tasks fast and efficiently.

The mulitWin® software monitors and regulates at the same time all the important system parameters. The software informs you immediately about errors in the system configuration and about the input of inappropriate parameters, thus preventing any unusable results from the outset. multiWin® checks for you the system performance and the quality of the analysis, delivers a clear display of the measurement results, and much more.

mutliWin® meets all requirements according to FDA 21 CFR part 11 and supports GLP-compliant working.



▲ *Analysis transparency ensured by an audit trail*

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Subject to changes in design and scope of delivery as well as further technical development!

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