



CS/CHS ANALYZERS

ONH ANALYZERS

THERMOGRAVIMETRIC ANALYZERS

EXCELLENCE IN ELEMENTAL ANALYSIS



| 1981

Foundation of
ELTRA GmbH

| 1984

Launch of the
C/S product line

| 1993

Development of
the ON analyzer

| 1999

Launch of the
ONH-2000 and
CS-2000
analyzers

| 2007

Development of
the thermogravimetric analyzer
THERMOSTEP

| 2012

ELTRA becomes
part of the Verder
Group

| 2015

Launch of
ELEMENTRAC
ONH-p

| 2016

Development of
ELEMENTRAC
CS-i

| 2018

Launch of
ELEMENTRAC
CS-d

| 2021

Launch of
ELEMENTRAC
ONH-p 2 with
Autocleaner and
ELEMENTRAC
CS-r & CHS-r

ELTRA – ELEMENTAL ANALYZERS

EXCELLENCE IN ELEMENTAL ANALYSIS

ELTRA's history started in 1981 with the development of the first carbon / sulfur analyzer for metal samples. Meeting the customers' requirements was a priority then, just like it is now. The aim has always been to create analyzers which are easy to operate, have a long service life and provide precise and reliable measurement data also under rough conditions, like in a mine or near a blast furnace.

Thousands of satisfied customers all over the world are proof of our success. They appreciate the reliability and flexibility of our analyzers, the good price-performance ratio of instruments and consumables and our excellent after sales service. ELTRA analyzers are used in many different industries like metal production and processing, aerospace, energy, medical engineering, environment, as well as in universities and research facilities.

ELTRA is part of the Verder Group since 2012 and consistently invests in research and development. With the introduction of the ELEMENTRAC series with powerful ELEMENTS software ELTRA offers analyzers for rapid and reliable O/N/H and C/S determination. These are characterized by modern design, convenient operation and integrated solutions for special applications, like our Dual Furnace Technology which allows analysis of both organic and inorganic samples with only one instrument – a unique concept only provided by ELTRA.



Eltra GmbH in Haan, Germany

ELTRA'S PRODUCT PORTFOLIO

ELTRA provides solutions for the precise and reliable determination of the chemical elements carbon (C), sulfur (S), oxygen (O), nitrogen (N) and hydrogen (H) as well as for the measurement of thermogravimetric parameters like ash or moisture. The sample materials can be organic (like coal, wood, plastics or soils) or inorganic (like metals, alloys, ceramics, construction materials). The common principle of all ELTRA analyzers is the combustion of analysis samples at temperatures up to 3000°C with

subsequent measurement of the gaseous reaction products (e. g. CO₂, water) or measurement of the weight loss after heating the sample in a thermogravimetric analyzer.

The instruments are used in production monitoring and quality control as well as in research and development.

PRECISE ANALYSES

HOW ELEMENTS INFLUENCE PRODUCT PROPERTIES

The chemical elements C, S, O, N, H are everywhere in our environment and they have a significant impact on the chemical and physical properties of both natural and technical products. The carbon concentration in steel products, for example, has a substantial effect on brittleness, whereas ductility is determined by the nitrogen content.

A high hydrogen concentration, for instance, reduces the calorific value in fuels like coal, coke and wood, or affects the mechanical stability of medical products like stents or hip prostheses.

With ELTRA analyzers it is not only possible to determine the total element concentration but also fractions of it. The element carbon, for example, can occur in various fractions which influence product properties in a different way.

The concentration of organic carbon (TOC), for example, indicates the fertility of soil whereas inorganic carbon (TIC) influences the pH value. In the construction materials industry, the TIC value is an important indicator for the stability of concrete or tiles.

The variety of applications and products which need to be analyzed calls for specialized analysis instruments which offer a high degree of flexibility based on a wide selection of accessories. ELTRA offers suitable analyzers for every type of C/S and O/N/H analysis.

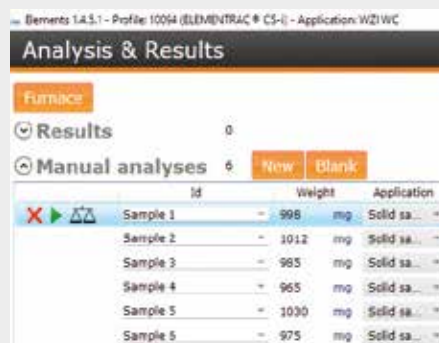
Operation of a combustion analyzer (example: ELEMENTRAC CS-i)

What all ELTRA analyzers have in common is easy operation and rapid C/S or O/N/H measurement in powders, granulates, wires or foil. After the sample has been

weighed and logged into the software, all further steps happen automatically once the analysis is started. The results are available within minutes.



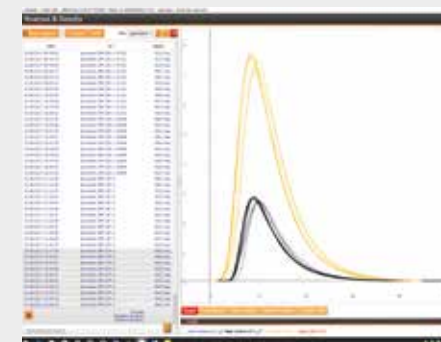
Weighing the sample



Logging the sample into the software



Introducing the sample



Analysis results after 40 - 60 sec

A WIDE RANGE OF APPLICATIONS

INDUSTRIES AND APPLICATION EXAMPLES

ELTRA analyzers meet and exceed the requirements of all international standards like ASTM 1019 or DIN EN 15936 and are employed in many different industries.



CEMENT/ CONSTRUCTION MATERIALS

Application

- | C/S in construction materials & fuels
- | TIC in cement
- | Loss on ignition in construction materials

ELTRA Analyzer

- | ELEMENTRAC CS-d
- | CW 800
- | TGA Thermostep



METAL PRODUCTION

Application

- | C/S in cast iron
- | Diffusible hydrogen in steel
- | Surface carbon on copper

ELTRA Analyzer

- | Elementrac CS-i
- | H 500
- | Surface C 800



AEROSPACE/MEDICAL ENGINEERING

Application

- | O/N/H analysis in titanium
- | C/S analysis in titanium

ELTRA Analyzer

- | ELEMENTRAC ONH-p 2
- | ELEMENTRAC CS-i



ENVIRONMENT/FOOD

Application

- | TOC/TIC in soil & waste
- | Dry weight & ash in food

ELTRA Analyzer

- | C(H)S-r and CS 580 A
- | TGA Thermostep

ANALYZERS FOR INORGANIC AND ORGANIC ELEMENTAL ANALYSIS



ELEMENTRAC ONH-p 2

- | Oxygen, nitrogen, hydrogen analyzer for steel, copper, titanium, ceramics
- | Impulse furnace up to 3000°C



CW 800

- | Water, CO₂ in gypsum, cement
- | Resistance furnace (quartz tube) up to 1000°C



ELEMENTRAC CS-d

- | Carbon, sulfur analyzer for iron, copper, ceramics and coal, coke, soil
- | Induction furnace (T > 2200°C) and resistance furnace (ceramics up to 1550°C)



CW 800 M

- | Carbon, water, TOC₄₀₀ / ROC₆₀₀ / TIC₉₀₀ analyzer for construction materials, welding powder, soil, waste
- | Resistance furnace (quartz tube) up to 1000°C



C(H)S-r

- | Carbon, sulfur (Option: hydrogen) and TOC/TIC analyzer for soil, waste, ores
- | Ceramic furnace up to 1550°C & optional monitor holder



H 500

- | Hydrogen / diffusible hydrogen analyzer for steel, iron
- | Resistance furnace (quartz tube) up to 1100°C



SURFACE C 800

- | Surface carbon on steel, iron, copper, aluminum
- | Resistance furnace up to 1000°C



ELEMENTRAC CS-i

- | Carbon, sulfur analyzer for iron, copper, ceramics
- | Induction furnace (T > 2200°C)



TGA THERMOSTEP

- | Automated determination of moisture, ash, volatiles, LOI in coal, construction materials and food



C(H)S 580 A

- | Carbon, sulfur (Option: hydrogen) and TOC/TIC analyzer for soil, waste, ore
- | Ceramic furnace up to 1550°C & optional Autoloader

CONFIGURATION OPTIONS

FLEXIBLE SOLUTIONS FOR YOUR APPLICATIONS

Depending on the application in research & development or quality assurance, an elemental analyzer needs to fulfill different configuration requirements.

Customers may choose between a full configuration or an individual number of measurement channels and IR cells for each ELTRA analyzer.

The ELEMENTRAC ONH-p 2, for example, can be equipped as single-element analyzer (e. g. only N), as combined analyzer (ON; OH; NH) or as full configuration for ONH analysis.

For C/S analyzers ELTRA provides free-of-charge integration of IR cells with configurations for special applications. These are available, for instance, to reliably determine high sulfur concentrations in high sample weights.

Options

The various analyzers offer different options for optimized usage:

- I Sample loader with up to 130 positions
- I Autocleaner
- I Gas purification ensures reliable measurement in the low ppm range
- I Halogen trap absorbs acid residues resp. F; Cl ; Br; I
- I Gold cuvettes increase robustness against halogens
- I REST API interface allows integration of ELEMENTRAC analyzers into automated processes



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**SCIENCE
FOR SOLIDS**

Verder Scientific is a business field belonging to the Verder Group and sets standards in the development, manufacture and sale of laboratory and analytics devices. Used in quality control, research and development for test-piece preparation and the analysis of solids.

For several decades our companies have supplied production plants and research institutes, laboratories for quality testing and analytics, all kinds of technical specialists and scientists with modern, reliable devices to solve the many and varied challenges they face.

