

# inductar ONH cube

*Oxygen, Nitrogen and Hydrogen Analysis  
by High-Temperature Induction Heating*



High sensitivity



High data quality



Extreme durability



Great flexibility

inductar ONH  cube

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## KEY FEATURES

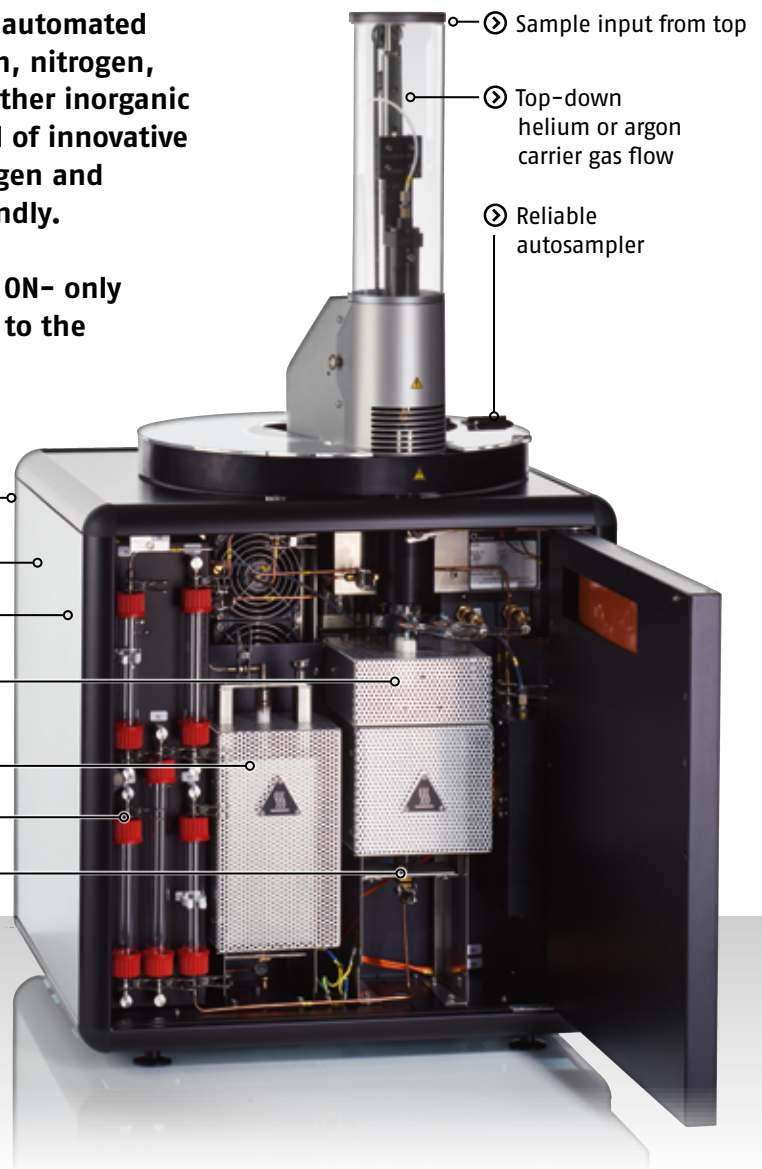
*Open your mind:  
experience new possibilities  
in ONH analysis.*

- Energy-efficient and long-living solid-state induction furnace
- Manual or automated sample loader for secure and unattended operation
- Gas-tight clamp connection system ensures easy and tool-free maintenance
- Intuitive and feature-rich software makes operator's life incredibly simple

Elementar developed an ONH analyzer which combines highly accurate data with simple, clean, and automated processes. Experience the new level of oxygen, nitrogen, and hydrogen determination in metals and other inorganic materials. The new inductar® ONH cube is full of innovative and advanced ideas to analyze oxygen, nitrogen and hydrogen simultaneously and more user-friendly.

The analyzer is also available as H-, OH- and ON- only configuration with the possibility to upgrade to the full ONH version at any time.

- 0: wide-range Infrared detector
- N: thermal conductivity cell
- H: electronic hydrogen sensor
- Solid-state induction furnace with temperature ramping function
- Efficient oxidation
- Drying agents with indicator
- Tool-free maintenance



## Innovative ideas

For the first time, a powerful but energy-efficient solid-state induction furnace enables extremely high temperatures up to 3000 °C. Combined with high-performance detectors, the inductor ONH cube shows excellent accuracy and outstanding reliability.

## Freely programmable methods

Fusion properties vary for different materials. Thus, it is important to adjust the temperature individually for reliable results. The solid-state induction furnace and Elementar's advanced software make it possible to tailor the temperature profile for every specific application. By this, complete fusion and accurate results are always ensured for a broad variety of inorganic materials.

## ONH ANALYSIS

For the first time, it is technologically possible to use induction heating also for ONH analysis. By using smart instrument design and modern induction technology, the required temperatures of up to 3,000 °C can be reached directly at the sample. The temperature ramping function enables the user to also distinguish between different element fractions and quantify them. In combination with new detection techniques (patent pending), sample introduction procedures and gas flow schematics, a simple to use instrument enables the user to reach the best detection limits.

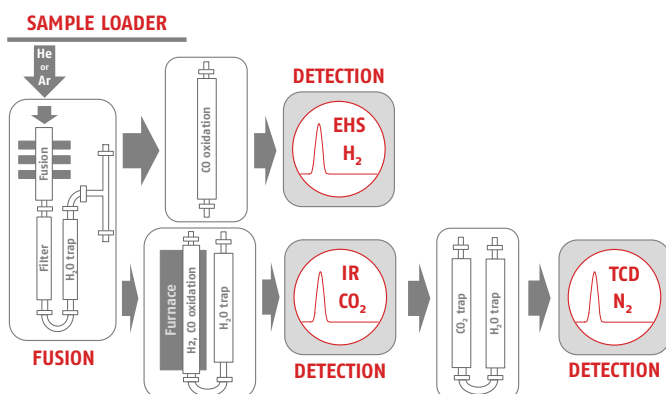


## Automated analysis

The fast and precise autosampler with its innovative robotic arm (patent pending) allows unattended operation. The sequence of all sample positions is user configurable and can be changed at any time. Automation is further accomplished by automatic weight transfer from balance, barcode reader support and easy LIMS integration. The inductor ONH cube is controlled via an intuitive, feature-rich, multi-language software. It is easy to use and configurable to fulfill all requirements in R & D, quality control, and high-throughput laboratories.

## Unsurpassed system uptime

The inductor ONH cube is developed for unsurpassed user convenience and maximum robustness. The proprietary solid-state technology for the induction furnace ensures a virtually unlimited lifetime of components. Maintenance work, which is a tool-free task, is performed within seconds.



## ADVANTAGES BY INDUCTION

Induction heating is in many respects advantageous for ONH analysis. The first advantage is obviously that no electrodes need to be frequently cleaned, which results in less maintenance and more reliable results. Second, as the graphite crucible is not connected to cooled electrodes, the sample container can be completely outgassed. Third, power and therewith the temperature can be smoothly controlled, which ensures best data quality. Moreover, the induction furnace is highly energy efficient, which reduces power consumption and makes it more flexible regarding the required lab infrastructure.



# Advanced ONH analysis for inorganic materials

SAMPLE	OXYGEN [%]	NITROGEN [%]	HYDROGEN [%]
STEEL	0.0052 ± 0.0004	0.0038 ± 0.0001	0.0005 ± 0.0001
STEEL POWDER FOR 3D PRINTING	0.0526 ± 0.0012	0.0063 ± 0.0005	0.00049 ± 0.00004
TITANIUM 1	0.4853 ± 0.0043	0.0270 ± 0.0005	0.0127 ± 0.0002
TITANIUM 2	0.1209 ± 0.0004	0.0096 ± 0.0001	0.0014 ± 0.0001
COPPER (Cu)	0.0327 ± 0.0013	0.0027 ± 0.0001	0.0003 ± 0.0001
COPPER OXIDE (CuO)	20.29 ± 0.19	-	-
NICKEL OXIDE (NiO)	21.84 ± 0.27	-	-
ALUMINIUM ALLOY (AlSi)	0.0700 ± 0.0012	0.0044 ± 0.0002	0.0038 ± 0.0002
MgN BASIS	2.72 ± 0.02	9.03 ± 0.08	0.0239 ± 0.0012

## EASE OF USE

The inductor ONH cube is optimized to significantly simplify the daily routine operation. Clearly arranged, easily accessible system components and the long-life combustion tubes minimize maintenance efforts. The tool-free clamp connection system ensures a reliably leak-tight instrument at any time. Thus, customers can enjoy smooth analyses and low instrument-handling time.

## QUALITY YOU CAN TRUST

Our consumables and spare parts are designed to meet the highest quality standards and reliability. They are certified and validated in accordance with international norms and standards. We do not compromise on quality of our parts and chemicals – this is the prerequisite of a guaranteed long lifetime of our instruments.

## IDEAL SOLUTION FOR

- Steel mills
- Foundries
- Aerospace industry
- Automotive industry
- Semiconductor industry

## SAMPLE TYPES ANALYZED

- Steel
- Cast iron
- Titanium alloy
- Copper alloy
- Other metals and inorganics



### High sensitivity

Outstanding sensitivity thanks to high performance, state-of-the-art technology.



### High data quality

Outstanding precision and accuracy through high performance combustion. Long-term stability of calibration.



### Extreme durability

Outstanding robustness and longevity thanks to state-of-the-art technology.



### Great flexibility

Wide range of materials analyzable.

## Elementar – your partner for excellent elemental analysis

Elementar is the world leader in high performance analysis of organic and inorganic elements. Continuous innovation, creative solutions and comprehensive support form the foundation of the Elementar brand, ensuring our products continue to advance science across agriculture, chemical, environmental, energy, materials and forensics markets in more than 80 countries.

Supported by:



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