

# rapid N exceed

*Time to rethink protein analysis*



Low cost per sample



High data quality



Extreme durability



High sample throughput

rapid N  exceed

# rapid N exceed

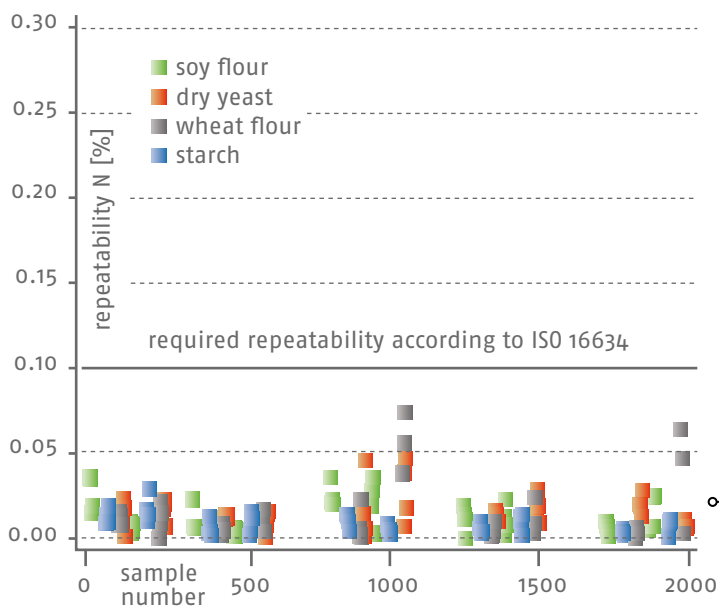
*Setting new standards  
in precision  
and cost per sample*

## KEY FEATURES

- Lowest cost per sample
- Inexpensive CO<sub>2</sub> as carrier gas
- EAS REDUCTOR® for up to 2,000 samples
- Fastest analysis (3–4 min.)
- 300 measurements per day
- Ease of use

**Faster, more precise, cost-saving, and eco-friendly. The rapid N exceed® sets new standards in protein analysis according to the Dumas method. With our patent pending EAS REGAINER® technology, analysis costs**

**are minimized drastically. At the same time, the number of samples that can be measured continuously multiplies. The new rapid N exceed stands for absolute precision and high detection sensitivity.**



⊙ Outstanding repeatability for different sample matrices over 2,000 consecutive analyses using the rapid N exceed. Each data point is calculated according to the given norms. The required repeatability is marked by a line.



## *Lowest cost per sample*

The rapid N exceed significantly reduces the consumption of reducing agent thanks to the proprietary EAS REGAINER technology and intelligent oxygen dosing through a ceramic lance. It is now possible to run up to 2,000 samples without the need to exchange the EAS REDUCTOR. In addition, the rapid N exceed uses well-priced CO<sub>2</sub> as carrier gas for unsurpassed low cost per sample.

## *High sample throughput*

The rapid N exceed offers the fastest N/protein determination in less than 4 minutes. During operation the sample feeder is accessible and reloadable at any position and time. The instrument is designed for safe unattended overnight measurements. This allows for more than 300 measurements per day in routine operation.

## *Reliable results*

The rapid N exceed guarantees outstanding precision and accuracy through controlled oxygen jet-injection directly into the active zone and an industry-proven, catalytic post-combustion. This leads to matrix-independent results for even hard to digest samples. No need for time-consuming, frequent calibrations or expensive matrix-specific standards. All this results in reliably high data quality and a detection limit in the low ppm range.

## *Future-proof investment*

Thanks to the outstanding robustness and longevity of our rapid N exceed, we grant a 10-year guarantee on the high-temperature combustion furnace and the thermal conductivity detector cell of the thermal conductivity detector (TCD). With our well-known, long-term oriented dedication to technical support, Elementar provides spare parts for a minimum of 10 years after the end of production. This yields outstanding low total cost of ownership and gives customers confidence in return of investment.

### DUMAS, THE METHOD OF CHOICE



All elemental analyzers from Elementar are designed for minimal sample preparation and secure, unattended 24 / 7 operation. They use the safe, simple, and environmental friendly Dumas principle. No boiling of concentrated acids, no hazardous waste, and no extensive cleaning of glassware is required in contrast to the wet chemical, time-consuming Kjeldahl method. Results including sample preparation and digestion in less than four minutes! In many application areas, Dumas is the standard method, e.g. for N/protein determination of cereals and grains, as well as flour and starch.

### EAS REGAINER TECHNOLOGY



Traditionally, combustion instruments use heated metals (copper, tungsten) to bind excess oxygen and to reduce formed nitrogen oxides to N<sub>2</sub>. This resulted in typical reduction metal lifetimes of several hundred samples. Elementar developed a new (patent pending) method which lowers the maintenance dramatically. In continuous flow, the EAS REDUCTOR is regenerated during each combustion phase by the inexpensive EAS REGAINER so that the instrument can be used for the analysis of up to 2,000 samples before replacing the EAS REDUCTOR is necessary. In conjunction with the use of carbon dioxide as carrier gas, this drastically reduces cost per sample.

# N / protein analysis has never been easier!

SUBSTANCE	PROTEIN [%]	ABS. SD [%]
PET FOOD	5.88	0.1
YEAST	13.81	0.1
DRIED YEAST	46.44	0.1
WHEAT FLOUR	10.81	0.03
SOY FLOUR	35.06	0.1
STARCH 1	0.11	0.01
STARCH 2	0.21	0.01
WHEAT BRAN	15.75	0.1
GLUTEN	68.44	0.1
CHEESE	34.06	0.1
CERVELAT (COLD CUT)	21.56	0.6
SLUDGE*	2.58	0.02

Sample weight: 200–300 mg, Protein Factor: 6.25

\* Values for total nitrogen

## 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.

## NORMS AND STANDARDS

The rapid N exceed is in accordance with the majority of international food, feed and fertilizer standards such as ISO 16634-1, ISO 16634-2, ISO 14891, ICC 167, EBC 3.3.2, EBC 4.3.2, EBC 8.9.2, EBC 9.9.2, AOAC 990.03, AOAC 992.15, AOAC 992.23, AOAC 993.13, AOAC 997.09 as well as a manifold of national standards, e.g. Lufa and DIN.

## IDEAL SOLUTION FOR

- Private food production facilities
- Food analysis contract laboratories
- Public food and farming laboratories
- Academic research groups

## SAMPLE TYPES ANALYZED

- Food & beverage
- Food supplement
- Animal feed
- Pet food
- Fertilizer



### Low cost per sample

Low consumption of reducing agent and oxygen. Utilization of well-priced carrier gas alternatives to helium.



### High data quality

Outstanding precision and accuracy through high performance combustion. Matrix-independent results. Longterm stability of calibration.



### Extreme durability

Outstanding robustness and longevity thanks to state-of-the-art technology. 10-year guarantee on the high-temperature combustion furnace and the thermal conductivity detector cell of the thermal conductivity detector (TCD).



### High sample throughput

Designed for 24/7 unattended operation. Industry-leading system uptime for highest laboratory efficiency.

## 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.

## Elementar Analysensysteme GmbH

Elementar-Straße 1 • 63505 Langenselbold (Germany)

Phone: +49 (0) 6184 9393-0 | [info@elementar.com](mailto:info@elementar.com) | [www.elementar.com](http://www.elementar.com)

