

# N / protein analysis has never been that easy!

SUBSTANCE	WEIGHT [mg]	PROTEIN [%]	ABS. SD [%]
CATTLE FEED	588	18.5	0.110
PET FOOD	500	21.43	0.201
YOGHURT	1,000	3.05	0.156
GERMAN SAUSAGES	500	11.44	0.145
PARMESAN CHEESE	500	45.03	0.549
WHEAT FLOUR	500	11.12	0.052
MILK	1,500	0.501	0.004
GERMAN BEER	2,000	0.060	0.006
NPK FERTILIZER	100	10.07	0.193
MANURE	1,500	0.39	0.015

Carrier Gas: Argon, n ≥ 6 repl., Protein factor: 6.25

### TRUSTFUL QUALITY

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. Whether it is FDA 21 CFR part 11, CE or ISO 9001 – Elementar applies the tightest international regulations governing quality control and product safety system uptime.

### NORMS AND STANDARDS

The rapid MAX 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 9.9.1, AOAC 99003, AOAC 99215, AOAC 99223, AOAC 99313 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



#### Ease of use

Easy, labor-saving instrument operation and sample preparation. Simplified maintenance.



#### High data quality

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



#### High sample throughput

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



#### Low cost per sample

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

### Elementargroup – your partner for elemental analysis

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

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rapid MAX N  exceed

MAXimum performance in protein analysis



Ease of use




High data quality



High sample throughput



Low cost per sample

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# rapid MAX N exceed

## Simplified sample handling

### KEY FEATURES

- Ease of use
- Simplified sample preparation
- Lowest cost per sample
- Argon as carrier gas (helium optional)
- EAS REDUCTOR® for more than 1,000 samples
- Fast analysis (5 min.)
- 300 measurements per day

## Ease of use

Save valuable time in sample preparation. The unique post-combustion technology ensures the complete digestion of even challenging species that are usually difficult to combust. Grinding or milling can therefore often be omitted without affecting reliable data quality.

## Sample flexibility

The upright crucible design ensures an optimal combustion of any kind of liquid samples, such as milk, beer, soft drinks, juice, soy sauce, etc. Combined with the unique post-combustion technology a reliably high, matrix-independent data quality is achieved. Solid samples of 1 g can be measured with outstanding precision and accuracy.

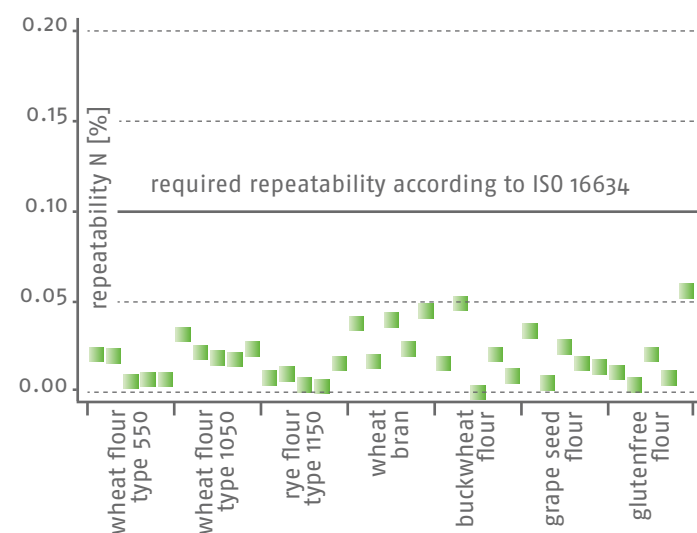
### DUMAS, THE METHOD OF CHOICE



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 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 the determination of N/protein in milk, milk products and cereals.

**Increased laboratory efficiency at significant lower price per sample. The rapid MAX N exceed is the first N/protein analyzer according to the Dumas method utilizing the highly successful EAS REGAINER® technology in combination with crucible-technology. Designed for**

**24 / 7 unattended operation, the instrument addresses any high throughput laboratory facing a wide range of sample types and weights. The rapid MAX N exceed stands for outstanding precision, sensitivity and sample flexibility.**



⊕ Outstanding repeatability for the analysis of different grains according to ISO 16634 using the rapid MAX N exceed. Sample weight: 500 mg, carrier gas: argon.

## Highest sample throughput

The rapid MAX N exceed offers the fastest N / protein determination in 5 minutes. In conjunction with the 90 position autosampler 300 samples per day can be measured. With the proprietary EAS REGAINER technology it is possible now to run more than 1,000 samples without the need to exchange reducing agent. Thus, customers can enjoy outstanding low maintenance intervention for industry-leading system uptime.



### 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 more than 1,000 samples without maintenance. In conjunction with the use of argon as carrier gas this drastically reduces cost per sample.

## Future-proof investment

Thanks to the outstanding robustness and longevity for all elemental analyzers a 10 year warranty on furnace and thermoconductivity detector (TCD) cell is granted. 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 results in outstanding low total cost of ownership and gives customers confidence in return of investment.