trace SN cube

The very best in ppb analysis

High sensitivity

High data quality

Great flexibility

Extreme durability

elementar

EXCELLENCE IN ELEMENTS

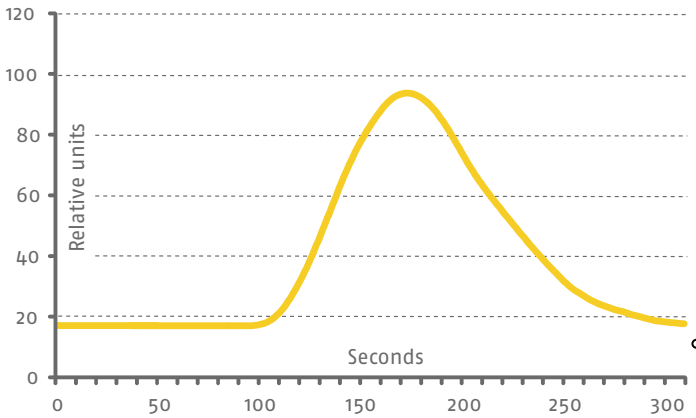
trace SN cube

Outstanding sample flexibility

KEY FEATURES

- Industry-leading performance and versatility
- Detection limit of 6 ppb for sulfur
- Detection limit of 15 ppb for nitrogen
- For liquids, LPG, gas and solid samples
- Outstanding robustness
- Up to 56 position autosampler

The trace SN cube is the world's most sensitive combustion analyzer for sulfur and nitrogen in diesel, gasoline and related samples. The catalyst-supported digestion technology ensures complete digestion of all kinds of samples without soot formation or insufficient recovery. The sample is always injected directly into the combustion tube, there is no need for time-consuming boat inlet feeding. Thus, the analysis time is just 3-5 minutes, depending on sample type. The trace SN cube works as two analyzers in one box. The sample is injected twice in different combustion tubes which allows the specific optimization of the oxidation process for each element.



Reliable determination of 100 µg / kg sulfur in a standard thanks to an outstanding low baseline noise and drift.

High sensitive detection

High sensitive chemiluminescence and UV fluorescence detectors ensure utmost sensitivity: 6 ppb for sulfur and 15 ppb for nitrogen. This ultra-trace detection power gives rise to uncompromised analysis of sulfur and nitrogen even in samples of lowest concentrations. This ensures that the trace SN cube greatly exceeds all requirements of international standards and gives confidence to fulfill expected tighter standard requirements in future.

Outstanding sample flexibility

Along with liquid injections the trace SN cube can be equipped with gas, LPG or solids module for a variety of matrices. A temperature controllable autosampler is also available which allows the analysis of highly volatile samples. In addition, the instrument can be easily retrofitted to measure liquid samples.

OIL ANALYSIS BY HIGH TEMPERATURE COMBUSTION

High temperature combustion for the determination of sulfur and nitrogen is still the matter of choice if sensitivity really counts. No other method delivers equally sensitive, matrix-independent results. By means of UV fluorescence detection for sulfur and chemiluminescence for nitrogen determination, detection limits of as low as 10 ppb can be achieved without problems, outperforming all competing techniques.

Unique N Excess module

The known problem of interference in UV fluorescence detection by NO (higher N concentrations simulate too high sulfur contents) is solved by means of Elementar's unique N Excess module. SO_2 is collected at an adsorption column and released after the decay of the signal caused by NO. This technique allows the precise determination of 0.1 mg / kg S in the presence of more than 100 mg / kg N.

True two channel operation

The trace SN cube works with two independent furnaces and combustion tubes. Thus, it is possible to adjust all parameters which may influence the results, such as temperature, injection volume, injection speed etc. of both channels completely independently. This results in an outstanding sample flexibility at always highest precision.

CATALYST SUPPORTED COMBUSTION

A well-known problem in high temperature combustion of oil and petrochemical samples is soot formation, caused by incomplete combustion. By using special developed accelerants, the oxidation process can be optimized dramatically. Almost any sample can be ignited without soot production at injection volumes up to 100 µl. This offers the customer a flexibility in sample handling which is outstanding in this class of analyzers. Also the maintenance efforts are drastically reduced.

Trace analysis has never been easier!

SAMPLE	SULFUR [mg/kg]	RSD [%]	NITROGEN [mg/kg]	RSD [%]
DIESEL	348	0.74	166	0.65
MINERAL OIL	0.664	0.96	6.66	1.88
TECHNICAL OIL	3.84	2.23	0.06	4.53
BENZENE	0.225	0.48	0.22	4.65
KETONE	183	1.04	7.56	1.85
AQUEOUS PROTEIN SOLUTION	26.9	1.34	363	2.42
BIOMASS	27.8	1.83	385	1.31

Injection volume 20–100 µl

EASE OF USE

The trace SN cube is optimized to significantly simplify the daily routine operation. Clearly arranged, easily accessible system components as well as a furnace that slides out 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 confidence in their results.

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

- Refineries
- R&D petrochemical laboratories
- Quality control laboratories
- Contract laboratories

SAMPLE TYPES ANALYZED

- Petroleum products
- Liquid organics
- Gas
- LPG

High sensitivity

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

High data quality

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

Great flexibility

Wide range of optional conversion kits available for special applications. Upgradeable at any time.

Extreme durability

Outstanding robustness and longevity thanks to state-of-the-art technology. 10 year warranty on the furnace.

Elementar – your partner for elemental analysis

Elementar is the world leader in high performance analysis of organic 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.

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