The PRIMACS SNC Total Carbon & Total Nitrogen Analyzer

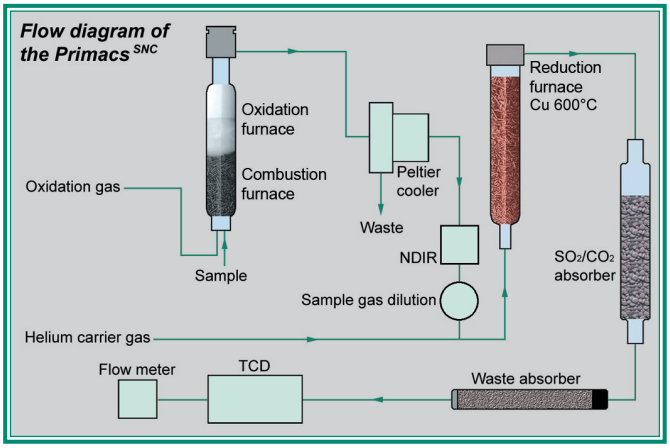
The analysis of Carbon and Nitrogen is important in soil, plant, animal feed, food samples, sediments and sludge samples. The Skalar Primacs^{SNC} Analyzer combines the analysis of Total Carbon and Total Nitrogen in one unit using high temperature catalytic combustion.

Operating Principle

The samples are introduced into the high temperature combustion furnace by the unique vertical “bottom-to-top” sample introduction system. At 1050°C the carbon is completely oxidized to CO_2 in the presence of a catalyst. The CO_2 is measured by Non Dispersive Infra Red Detection (NDIR) for Total Carbon. The analysis of Nitrogen is based upon the well-proven DUMAS technology. Nitrogen is converted in NxOy which is reduced at 600°C to N_2. The N_2 gas is measured by Thermal Conductivity Detection (TCD). The software displays the carbon and nitrogen peaks simultaneously in real-time and the results can easily be printed or exported to a LIMS system. Whenever priority samples have to be analyzed, the work list can be extended during the run. The sample is weighed into a re-usable quartz crucible and the sample weight is automatically transferred to the work list in the software, which avoids transcription errors.

The Primacs^{SNC} analyzer provides an accurate reliable solution for the automation of Total Carbon and Total Nitrogen analysis and has been designed as an easy-to use and low maintenance analyzer. Due to the unique vertical “bottom-to-top” sample introduction, the sample ashes remain in the crucible after the analysis and are taken out of the instrument with removal of the crucible. This avoids sample ash build-up in the combustion zone and therefore reduces the maintenance. The re-usable crucibles and the low consumption of combustion and carrier gas result in a low cost-per-test.

The Primacs^{SNC} complies with international regulations such as- CEN, ISO 10694, NEN-EN 131137, AOAC 990.03, AOAC 992.15, AACC 46-30 and ASBC.



Typical applications:

- Soil and Plant
- Sludges and sediments
- Food
- Waste incinerators
- Waste water plants
- and many more

General Characteristics

Analytes	Total Carbon and Total Nitrogen / Protein
Method	TC: High temperature catalytic combustion with Infrared Detection (NDIR)
	TN/Protein: Dumas combustion technique with Thermal Conductivity Detection (TCD)
Samples	Solid and liquid samples in - Food, soil, plant, sediment, sludge, waste, etc.
Autosampler	20 position integrated autosampler
Sample introduction	Unique vertical “bottom-to-top” sample introduction system
Features	Automatic balance interfacing
	Back flush system to remove ambient air for accurate low level analysis
	Re-usable quartz crucibles
	Complies with international regulations such as ISO, EN, AOAC, ASBC etc.

Operational and Performance Characteristics

Measuring range	Total Carbon: 0.01 – 120 mg C Absolute, Total Nitrogen: 1 – 100 mg N Absolute
Analysis time	Approx. 3 - 5 minutes
Sample size	Solid samples: up to 1 gram (100-200 mg nominal)
	Liquid samples: up to 200 mg (µl)
Furnace Temperature	Oxidation furnace 1100°C
	Reduction furnace 600°C
Reproducibility	< 1 % RSD, FSD (full scale deflection)
Data processing	Area calculation

Physical Characteristics

Gas	Combustion: O_2 (99.995%), Reduction: He (99.99%)
Power requirements	220 – 240 V, 50/60 Hz
Dimensions (hxdxw)	83 x 50 x 59 cm (32.7 x 19.7 x 23.2 inches)
Weight	56 kg (123 lb)

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